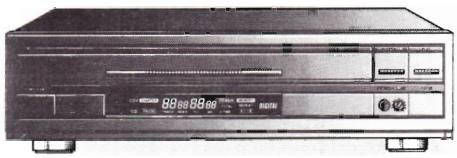
CD-Video player CDV475

/00R/02R/05R/13R

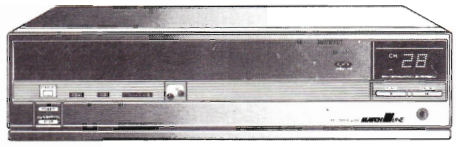
CDV988

/00R/05R

Service
Service
Service



CDV475 44 152 A11



CDV988 44 277 A11

This manual replaces manual CDV475/00R/05R code nr.:4822 725 21983

Service Manual

CD VIDEO

CDV988 is the matchline version of the CDV475 the differences are:

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CLASS 1
LASER PRODUCT
3122 110 03420

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviçic

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"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

Subject to modification
4822 725 22248
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PHILIPS

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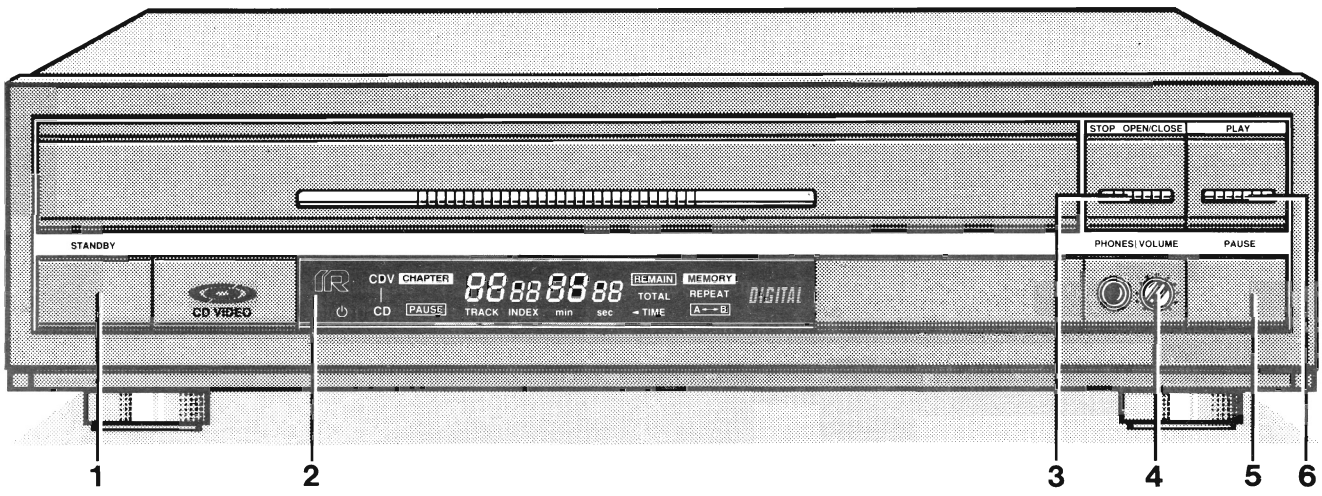
1. Table of contents

2. CONNECTIONS AND CONTROLS



Front panel controls

1 'STANDBY' key
In 'Standby' mode, switches the player to 'On'. In 'On' mode switches the player to 'Standby'. Can be used to switch the player to 'Standby' from any operating condition.

2 'IR' eye
Receives the signals from the remote control handset. When a signal is received, a red LED lights on the player display, and a star appears on the TV screen.

3 'STOP OPEN/CLOSE' key
Opens and closes the disc tray and stops play.
With the disc tray closed, and the player stopped, pressing this key opens the disc tray. A second press closes the tray again.
When a disc is playing, pressing this key once stops the player. Pressing it a second time opens the disc tray, after the disc has stopped rotating.
The key has a built-in LED which lights while the 'STOP OPEN/CLOSE' function is active.

4 'VOLUME' control
Controls the sound level when listening with headphones connected to the 'PHONES' socket.

5 'PAUSE' key:
Holds play at the start of a track, chapter or passage, or interrupts play.
Pressing this key closes an open tray and brings the laser pick-up head to the start of the first track or chapter, in readiness for a further command.
The key has a built-in LED which lights while the 'PAUSE' function is active.

6 'PLAY' key
Starts play, or returns to the beginning of a track or chapter.
Pressing this key closes an open tray and starts the disc playing.
Pushing the front of an open tray produces the same result.
The key has a built-in LED which lights while the 'PLAY' function is active.

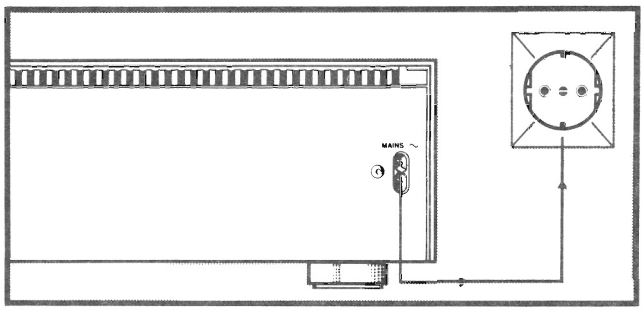
CONNECTIONS

At the back of the player you will find the following connection sockets:
- 'REMOTE OUT/IN' (2 × Cinch)
- 'VIDEO' (Cinch)
- 'OUT L/R' (2 × Cinch, gold plated)
- 'ANT.-IN'
- 'T.V.-OUT'
- 'DIGITAL OUT' (Cinch, gold plated)
- 'A/V EUROCONNECTOR'
- 'MAINS'

A 6.3 mm stereo headphone socket is located on the front panel ('PHONES').

The connection facilities are designed to give you the best possible CD-Video sound and pictures obtainable from your audio and video equipment.

Connecting to the mains



Connect the socket end of the power cable supplied to the 'MAINS' connector on the player, and plug the other end in to a wall socket. The red LED on the display will light up to indicate that the player is in 'Standby' mode. In this mode, only the remote control receiver and antenna amplifer are powered; the rest of the player is switched off.

Controls on the remote control handset

7 'DISPLAY' key
Selects the information, relating to disc play, shown on the player display and the TV screen. The information displayed depends on the type of disc being played.

8 'STANDBY' key
The same function as on the front panel.

9 NUMERIC PAD '1-0' keys
For track, chapter, frame and time selection.

10 'CLEAR' key
Clears incorrect Numeric Pad '1-0' entries for track, chapter, frame or time selections. Erases programmes.

11 'MEMO' key
Stores track or chapter numbers in the memory during programming.

12 'TRACK/CHAPTER' key
For selecting or programming tracks or chapters using the Numeric Pad.

13 'FRAME/TIME' key
For selecting frames or times using the Numeric Pad.

14 'A/B REPEAT' key
Defines and starts a continuous repeat cycle between two selected points on a disc.

15 'CONT. REPEAT' key
For repeating a disc or programme.

16 'STOP OPEN/CLOSE' key
The same function as on the front panel.

17 '— SPEED +' keys
For reducing ('—'), or increasing ('+') the playback speed of Active Play discs.
'—' gives steps of ½, ¼ and ⅛ of the normal speed, 1 frame per second and 1 frame per 3 seconds; '+' gives steps of 2×, 4×, and 8× the normal speed.

18 'REV SLOW FWD' keys
For reverse playback with the facility to change the speed ('REV') and for slow or fast motion playback in the normal direction ('FWD') with Active Play discs.

19 'REV STILL FWD' keys
For holding play at a particular frame, and for frame-by-frame playback in either reverse ('REV') or forward ('FWD') direction with Active Play discs.

20 'REV SCAN FWD' keys
For searching out particular passages in either reverse ('REV') or forward ('FWD') direction.

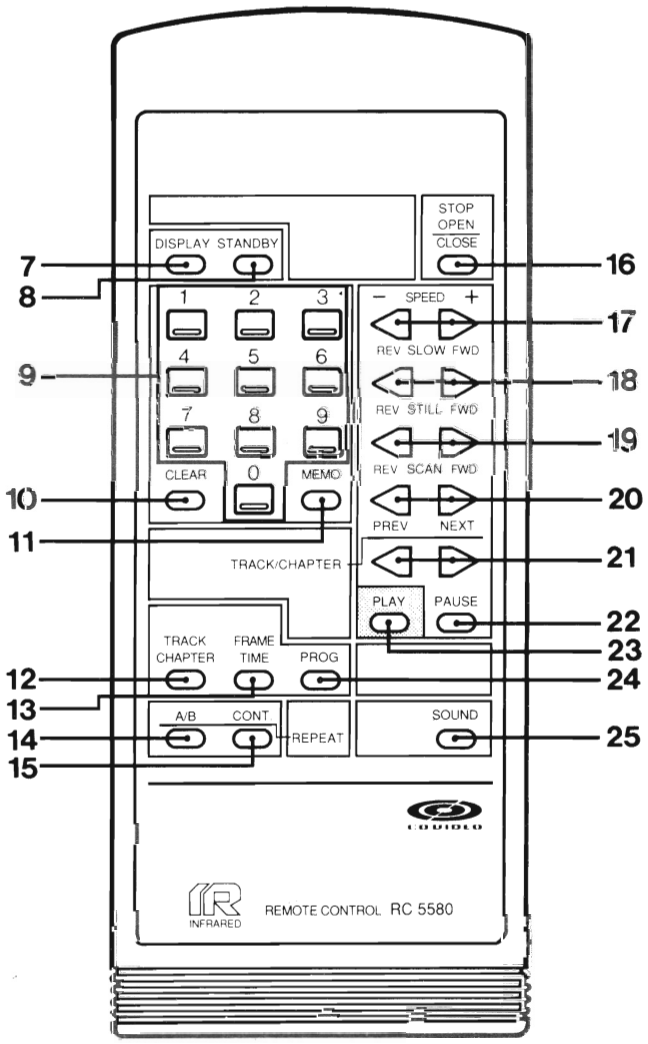
21 'TRACK/CHAPTER' 'PREV' 'NEXT' keys
For moving to a previous ('PREV') or following ('NEXT') track or chapter.

22 'PAUSE' key
The same function as on the front panel.

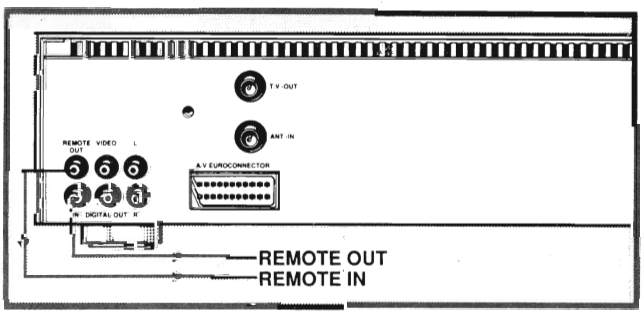
23 'PLAY' key
The same function as on the front panel.

24 'PROG' key
For the selection of the programming function.

25 'SOUND' key
Switches between stereo sound, sound track 1 and sound track 2 sequentially. Not operational for Compact Discs, or audio-only sections of CDV Singles.

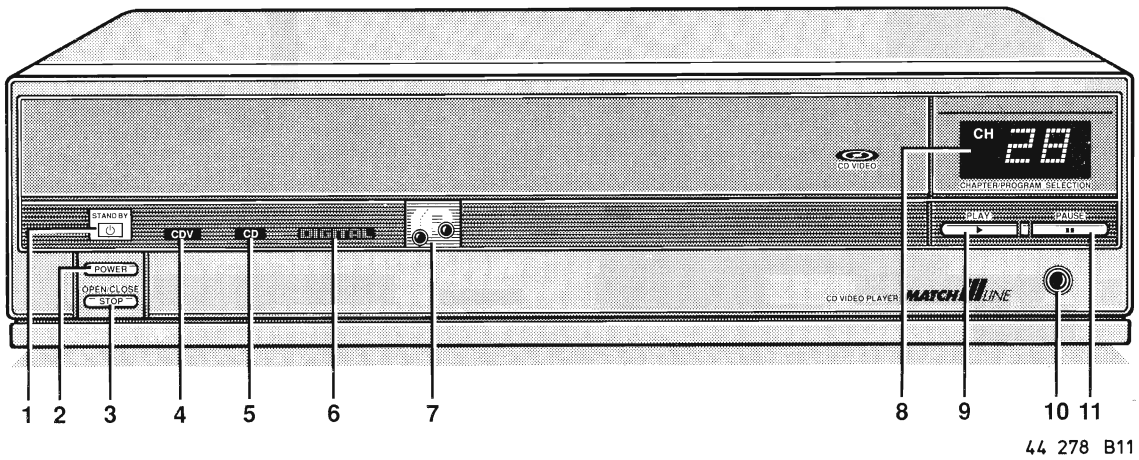


Connecting to another remote control receiver



If you have a TV or A/V system which is operated via a suitable 'RC5' Remote Control receiver, you can operate your CDV475 via the remote control receiver of this system. Consult the directions for use of the system or TV, and connect the 'REMOTE OUT/IN sockets of of the CDV player with the System or TV. If the location of the player - for example in a cabinet - makes reception of the remote control signals difficult, you can also connect a separate remote control receiver and locate it at a suitable place. Such a receiver is available as an accessory under type number EMI 2200, and should be connected to the 'REMOTE IN' socket on the player.

2. CONNECTIONS AND CONTROLS CDV988



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You can play discs on your new CD Video player by following the foregoing simple instructions. It's as easy as that.
But of course, the CDV988 offers many more facilities. Before you try to use them, it is best to get to know the controls and indications, the display and the messages on the TV screen, and what they can do for you.

First, the controls on the front of the player are described, then those on the remote control handset. An explanation of the player's display, and the TV screen messages, then follows.

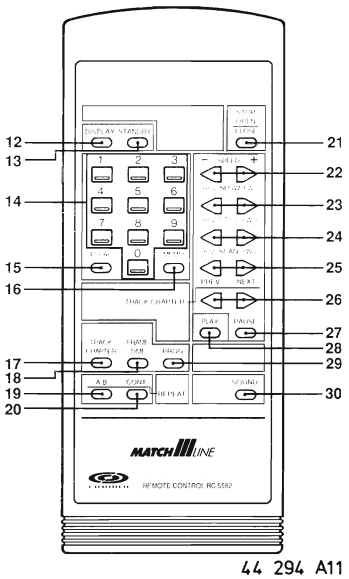
Front panel controls

1 'STAND BY' indication
Lights when the player is in 'stand by' mode.
2 'POWER' key
In 'stand by' mode, switches the player to "on". In 'on' mode switches the player to 'stand by. Can be used to switch the player to 'stand by' from any operating mode.
3 'STOP OPEN/CLOSE' key
Opens and closes the disc tray and stops play.
With the disc tray closed, and the player stopped, pressing this key opens the disc tray. A second press closes the tray again.
When a disc is playing, pressing this key once stops the player. Pressing it a second time opens the disc tray, after the disc has stopped rotating.
4 'CDV' indication
Lights when a CD Video or CD Video Single disc is being played and flashes when one of these discs, or a programme from one, is being repeated.
5 'CD' indication
Lights when a Compact Disc is being played and flashes when one of these discs, or a programme from one, is being repeated.
6 'DIGITAL' indication
Lights when digitally recorded sound is being played.
7 'IR' eye
Receives the signals from the remote control handset. When a signal is received, a red LED lights next to the eye, and a star appears on the TV screen.
8 Display
Informs you about the functioning of the player.
9 'PLAY' key
Starts play, or returns to the beginning of a track or chapter. Pressing this key closes an open tray and starts the disc playing. Pushing the front of an open tray produces the same result.
10 Headphones socket
For listening to discs without using an amplifier.
11 'PAUSE' key:
Holds play at the start of a track, chapter or passage, or interrupts play.
Pressing this key closes an open tray and brings the laser pick-up to the start of the first track or chapter, in readiness for a further command.

Controls on the remote control handset

12 'DISPLAY' key
Selects the information, relating to disc play, shown on the TV screen. The information displayed depends on the type of disc being played.
13 'STANDBY' key
The same function as the 'POWER' key on the front panel.
14 NUMERIC PAD '1-0' keys
For track, chapter, frame and time selection.
15 'CLEAR' key
Clears incorrect Numeric Pad '1-0' entries for track, chapter, frame or time selections.Erases programmes.
16 'MEMO' key
Stores track or chapter numbers in the memory during programming.
17 'TRACK/CHAPTER' key
For selecting or programming tracks or chapters using the Numeric Pad,
18 'FRAME/TIME' key
for selecting frames or times using the Numeric Pad.
19 'A/B REPEAT'key
Defines and starts a continuous repeat cycle between two selected points on a disc.
20 'CONT. REPEAT' key
For repeating a disc or programme.
21 'STOP OPEN/CLOSE' key
the same functions as on the front panel.
22 '– SPEED +' keys
For reducing ('–') or increasing ('+') the playing speed of Active Play discs.
'–' gives steps of 1/2, 1/4, 1/8 and 1/16 of the normal speed, 1 frame per second and 1 frame per 3 seconds; '+' gives steps of 2×, 4× and 8× the normal speed.
23 'REV SLOW FWD' keys
For reverse playback with the facility to change the speed ('REV') and for slow or fast motion playback in the normal direction ('FWD') with Active Play discs.
'REV STILL FWD' keys.
24 For holding play at a particular frame, and for frame-by-frame playback in either reverse ('REV') or forward ('FWD') direction with Active Play discs.
25 'REV SCAN FWD' keys
For searching out particular passages in either reverse ('REV') or forward ('FWD') direction.

26 'TRACK/CHAPTER' 'PREV' 'NEXT' keys
For moving to a previous ('PREV') or following ('NEXT') track or chapter.
27 'PAUSE' key
The same function as on the front panel.
28 'PLAY' key
The same function as on the front panel
29 'PROG' key
For the selection of the programming function.
30 'SOUND' key
Switches between stereo sound, sound track 1 and sound track 2 sequentially. Not operational for Compact Discs, or audio-only sections of CD Video Singles.



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Transporting the player

For transport, the player mechanism must be properly secured by re-fitting the packing piece and the transit screw with collar, or damage may result. For this purpose, the player must be connected to the TV set and mains supply.

- Take the black plug from the transit screw hole in the top panel and press it into the hole provided in the packing piece.
- Take the transit screw and red collar from the packing piece.
- Switch on the player by pressing 'STANDBY', and also switch on the TV.
- Open the drawer by pressing 'STOP OPEN/CLOSE'.
- Fit the packing piece in the position shown.
- Hold 'STOP OPEN/CLOSE' **pressed** and while the drawer is closing press 'STANDBY' as well.
- Immediately after 'TRANSPORT' appears on the TV screen, disconnect the player from the mains supply; also from the TV set after switching it off.
- Finally fit the transit screw and red collar.

Removing the transit clamps

- Open the partly open flap of the disc tray completely and remove the two red triangular blocks. Then allow the flap to shut.
- Clip the transit screw together with its red collar on to the packing piece. Keep this piece and the red triangular blocks in a safe place, because the blocks, packing piece, screw and collar must be refitted if you should need to transport the player again. See 'Transporting the Player' under 'ADDITIONAL INFORMATION'.

Transporting the player

For transport, the player mechanism must be properly secured by re-fitting the red triangular blocks, the packing piece and the transit screw with collar, or damage may result. For this purpose, the player must be connected to the TV set and mains supply.

- Hold 'STOP/OPEN/CLOSE' **pressed**, and while the tray is closing press 'POWER/STANDBY' as well. During this operation the flap of the tray must be kept open! The indication 'TRANSPORT' appears on the TV screen.
- While keeping the flap open, push the red triangular blocks in the corners of the tray opening. Then close the flap as far as possible.

4. Audio performance

4.1 Digital Audio

All values measured from 20 Hz to 20 kHz into nominal load except when indicated otherwise.

1	Number of channels	: 2
2	Output voltage	: 260 mV_{RMS} ± 0.5 dB at −20 dB, 1 kHz
3	Left-right unbalance	: ± 0.6 dB max
4	Output impedance	: 200 Ω
5	Nominal load impedance	: 10 KΩ//300 pF
6	Amplitude response	: ± 0.5 dB max
7	Phase non-linearity	: ± 0.5 deg
8	SNR	: > 94 dB
9	SNR (with SCART and TV-set on)	: > 80 dB
10	Dynamic range	: > 90 dB
11	THD + noise	: − 90 dB min
12	Outband suppression	: > 50 dB above 24.1 kHz
13	Channel separation (1 kHz)	: > 96 dB
14	Mute during random acces	: > 90 dB
15	Automatic switching deemphasis with 15/50 uS time constants	

4.2 Analog Audio

All values measured at 1 kHz-100% modulation into nominal load except when indicated otherwise.

1	Number of channels	: 2
2	Output voltage	: 650 mV_{RMS} ± 1.5 dB at
3	Left-right unbalance	: ± 1 dB max
4	Amplitude response	: 40Hz-20kHz ± 3dB max
5	SNR	: > 50 dB
6	Channel separation (1 kHz)	: > 50 dB
7	Distortion	: < −40 dB
8	Analog deemphasis	: 75 uS
9	Audio only during play forward, 80 dB mute during other functions	

4.4 Audio channels

1	CD and clip (audio tracks):	Stereo only
2	Clip (video track), CDV 8" and 12" :	Stereo & bilingual

Headphone amplifier performance	: 20-20.000 Hz unless otherwise stated)
Load impedance range	: 8 Ω-2 kΩ
Output power	: 30 mW at 32 Ω 30 mW at 600 Ω
Frequency range	: 20-20.000 Hz ± 0.1 dB
Channel unbalance	: ± 0.5 dB
Signal-to-noise ratio	: > 93 dB
Dynamic range	: > 90 dB
Total harmonic distortion (incl. noise)(at 600 Ω)	: < 0.003% (< −90 dB)
Intermodulation distortion (at 600 Ω)	: < 0.003% (−90 dB)
Channel separation (at 600 Ω)	: < 75 dB

Video performance

1	CVBS ouput (CINCH & SCART)	: 1 V_{pp} into 75 Ω
2	RGB output (SCART)	: 0.7 V_{pp} into 75 Ω
3	RGB unbalance	: > 3%
4	Bandwidth after demod. & TBC	: 5 MHz (-5 dB)
5	Rise/fall time	: 130 ns
6	Overschoot	: < 8%
7	SNR unweighted	: > 40 dB (disc-SNR) 45 dB)
8	SNR Luminance	: 40 dB
9	SNR Chrominance	: 38 dB
10	Horizontal resolution	: 440 lines
11	Video time base instability	: < 10 ns, except during SCAN

Connections

CVBS output (cinch)	: 1 Vpp into 75 Ω
RGB output (Euroconnector)	: 0.7 Vpp into 75 Ω
Digital output (gold-plated cinch)	: 0.5 Vpp int 75Ω
Audio output (2x gold-plated cinch)	: 2 V rms, typical, at 10 kΩ
Remote in/out (2x cinch)	: 2 Vpp at 2.2 kΩ RC5
Headphone (6.3 mm socket)	: 8-2 kΩ
RF output	: 75Ω-UHF channel 32-40 adjustable
Antenna input	: 75Ω

Power supply

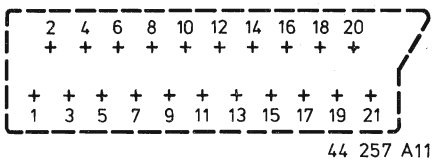
mains voltage	: 185-265 V AC, with service soulution for 110, 127 and 240 V
Mains frequencies	: 50 and 60 Hz
Power consumption	: 55 W approx.; stand-by 8W
Electrical requirements	: IEC

Cabinet, general

Material/finish	: metal/ABS; brushed front
Dimensions (wxhxd)	
Cabinet with tray closed	: 420x100x393 mm approx.
Cabinet with tray opened	: 420x100x613 mm approx.
Weight	: 8 kg approx.

The right is reserved to change data if necessary
This CD-Video player complies with radio interference requirements as laid down in EEC regulations.

A/V Euro connector

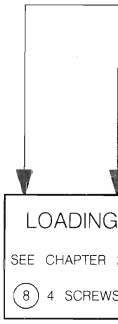


Pin Signal

1	audio out (right) 650 mV r.m.s./1 kΩ
3	audio out (left) 650 mV r.m.s./1 kΩ
4	audio earth
5	blue earth
7	blue out 0.7 V/75 ohm
8	RC-5 in/out; CVBS status 12 V
9	green earth
11	green out 0.7 V/75 Ω
13	red earth
15	red out 0.7 V/75 Ω
16	RGB status
17	CVBS earth
18	RGB status earth
19	CVBS out 1 V/75 Ω (also acts as sync out when using RGB)
21	socket earth

Service tools for the CDV475

1x flat cable	(28 p)	4822 321 22613
1x connector	(28 p)	4822 267 70219
1x connector cable	(12 p)	4822 321 22528
2x connector cable	(4 p)	4822 321 22529
1x connector cable (pal system	(6 p)	4822 321 22531
1x audio test disc 1 (type nr. 5/5a)	(set)	4822 397 30096
1x audio signals disc		4822 397 30185
1x cdv single test disc		4822
4x support (Loading)		4822 395 30202
Torx screwdriver set		4822 395 50145



WARNING

ESD

All ICs and
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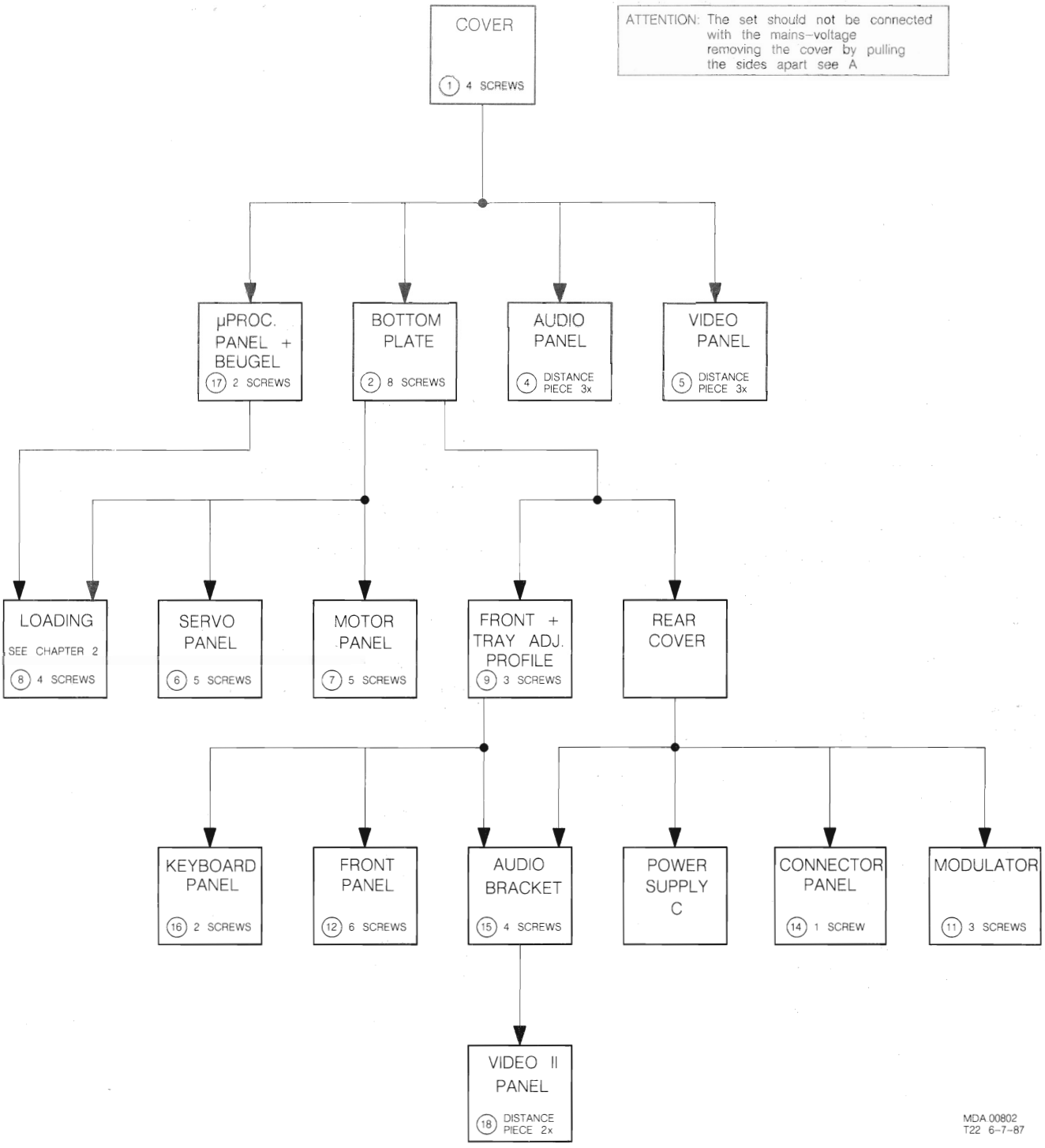
Radiation an

CHAPTER 1
DISASSEMBLY



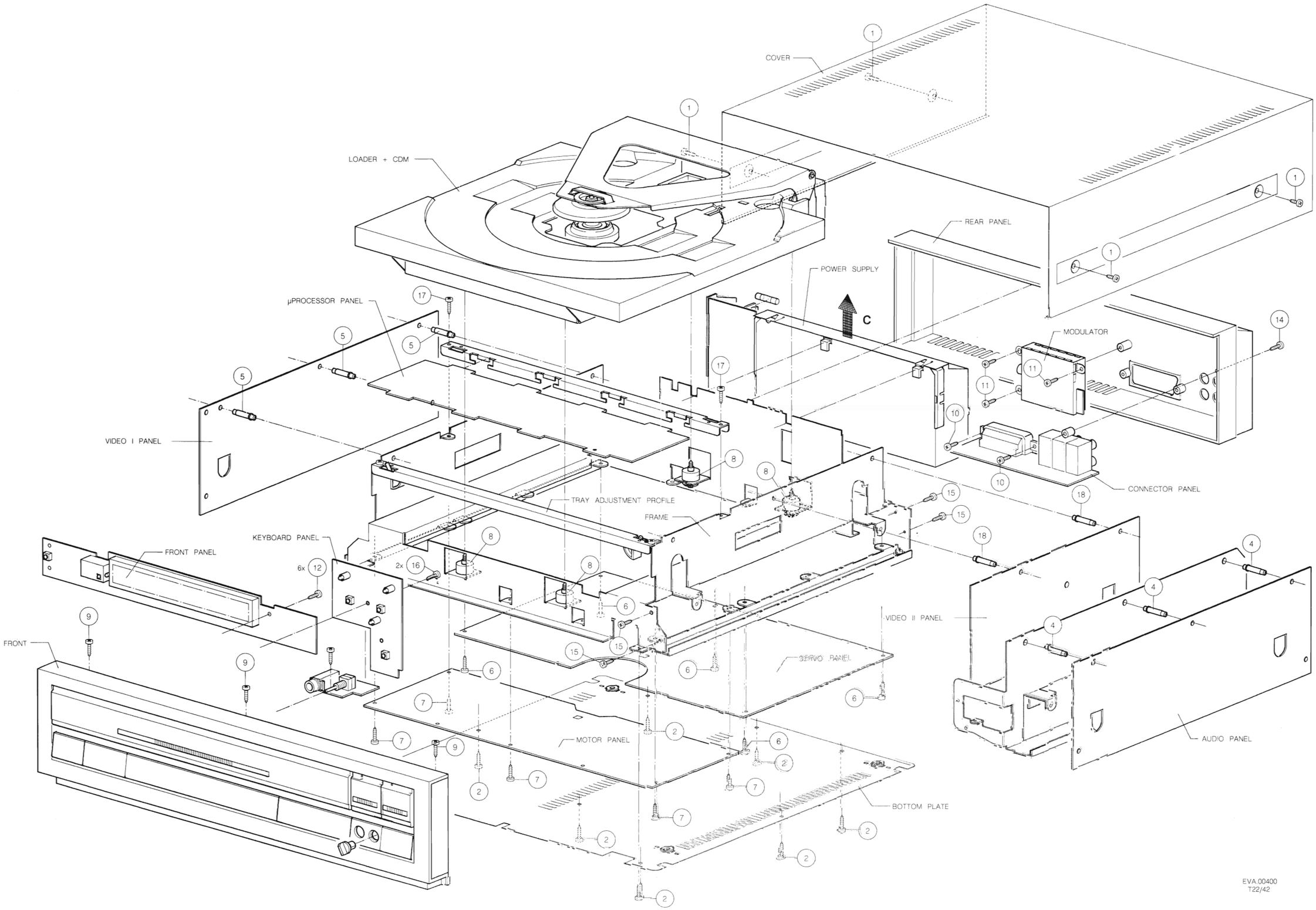
WARNING

ESD

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

Radiation and ESD according to: VDE0872 part 4+5

DISASSEMBLY EXPLODED VIEW CABINET



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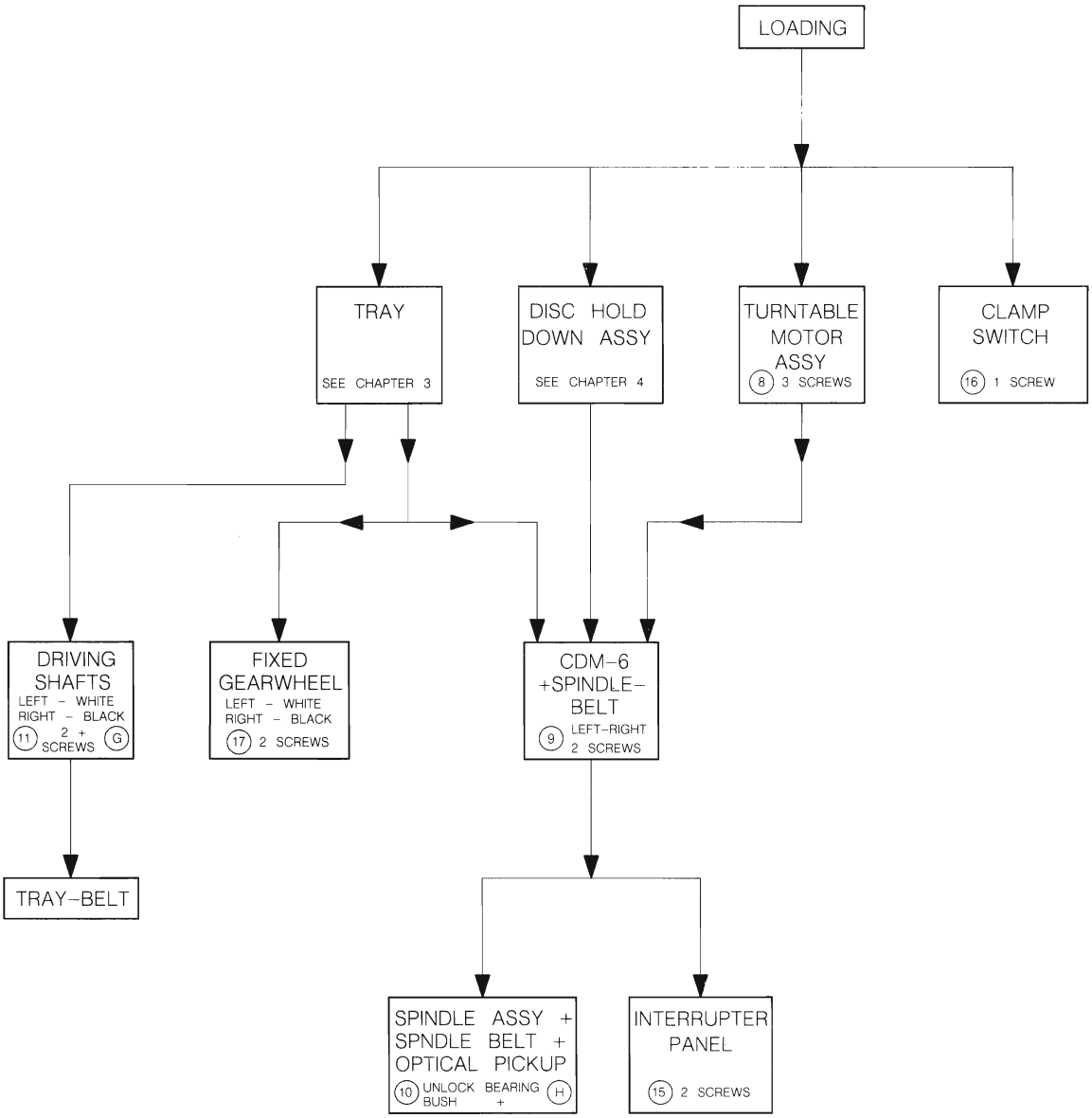
CHAPTER 2

DISASSEMBLY LOADING



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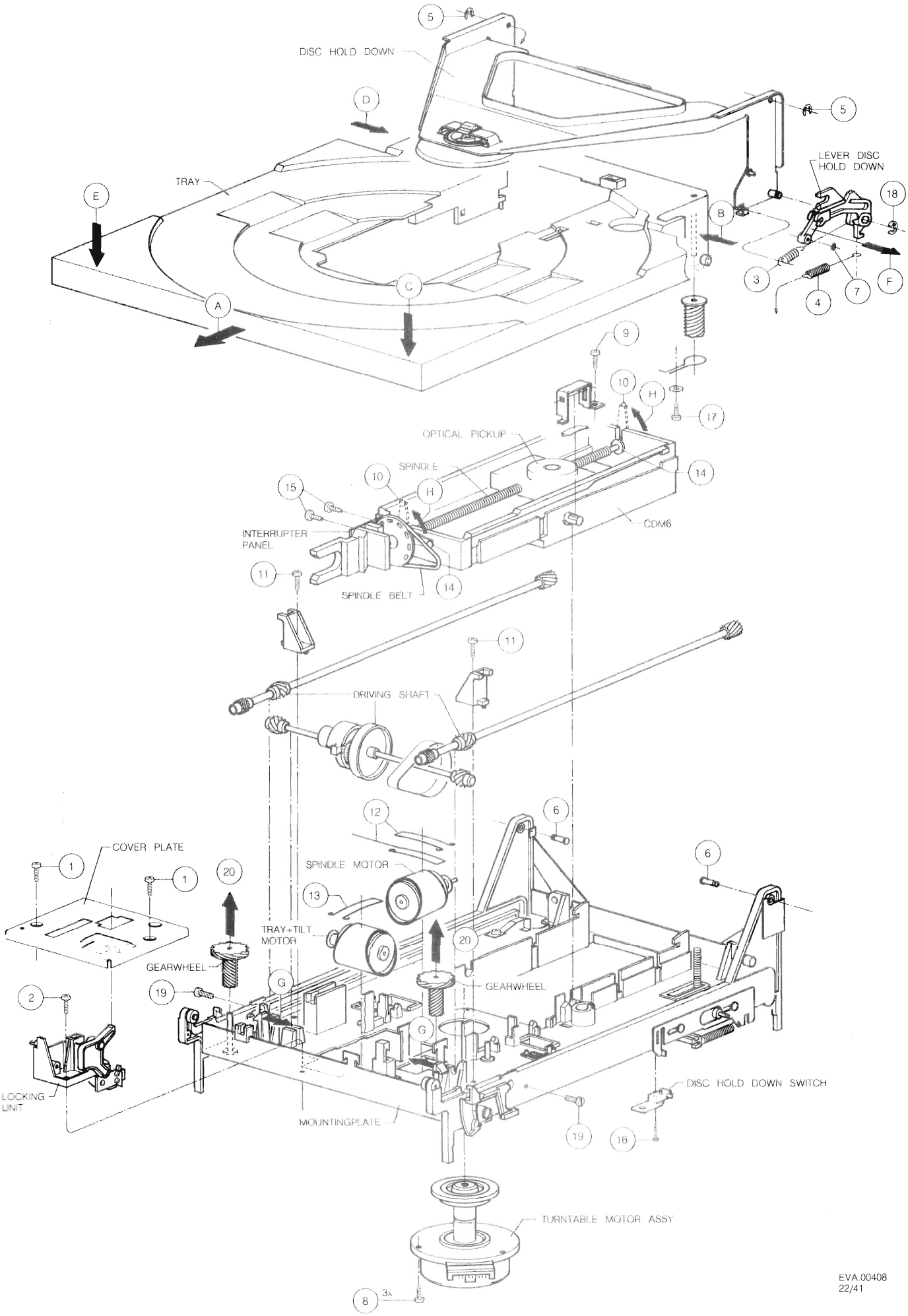

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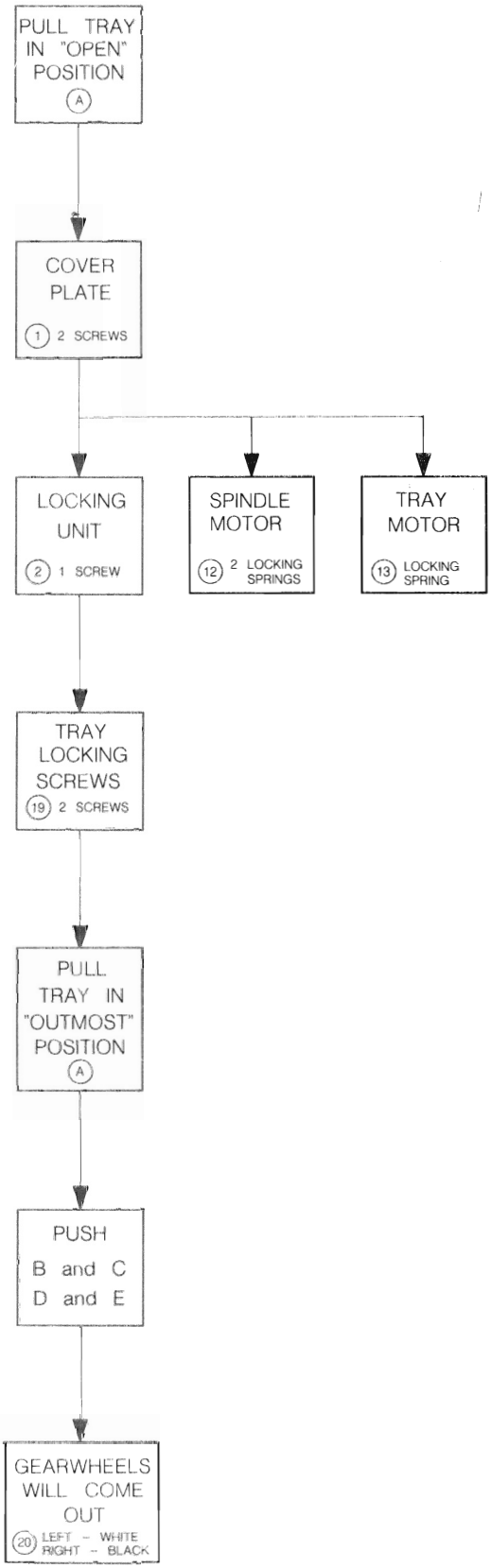
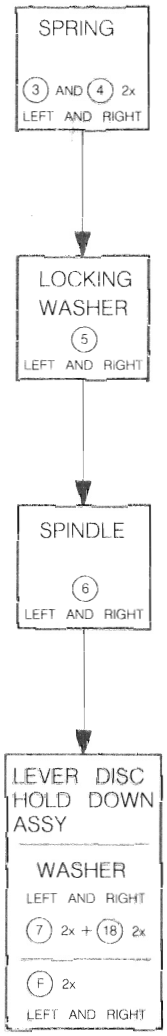
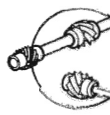
CHAPTER 3
DISASSEMBLY TRAY



CHAPTER 4
DISASSEMBLY DISC HOLD DOWN ASSY





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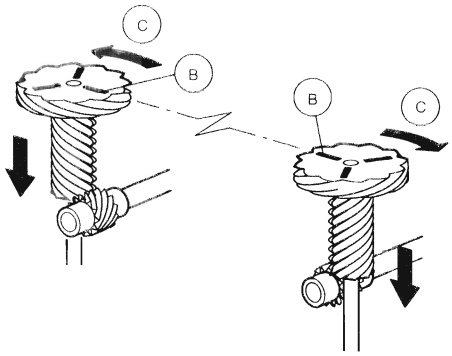

ASSEMBLY

- GEARWHEEL

ATTENTION

LEFT – WHITE

RIGHT – BLACK

MARK (B) TO

THE INNER SIDE

AND TURN (C)

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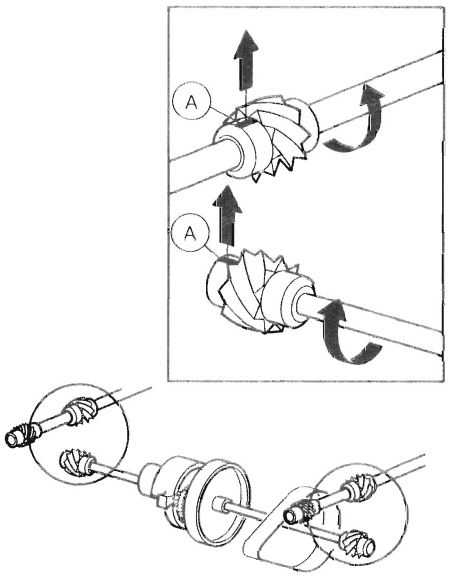

ASSEMBLY

- DRIVING SHAFTS

ATTENTION

LEFT – WHITE

RIGHT – BLACK

THE MARKS (A)

AT THE TOP SIDE

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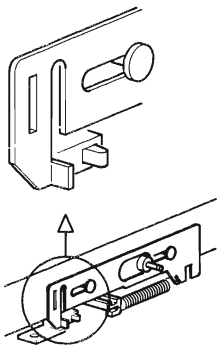
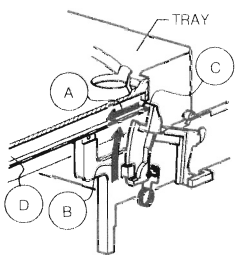
MECHANICAL ADJUSTMENT



MDA.00862
T22/42



ASSEMBLY

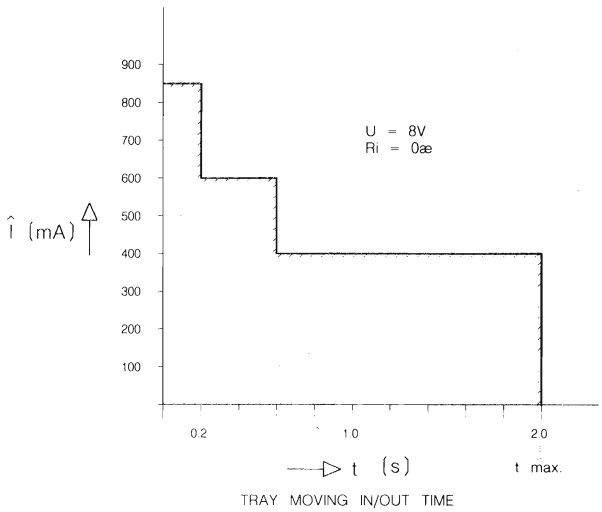
- TRAY HOLD DOWN

TRAY OUT MOST POSITION

TRAY HOLD DOWN ASSY (B)

HOOK (C) IN GROOVE (D)

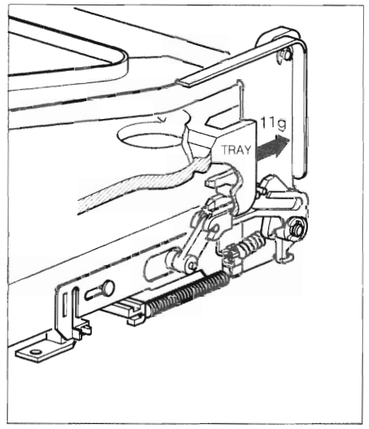
MDA.00862
T22/42

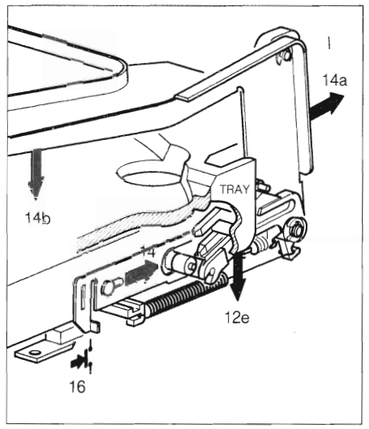


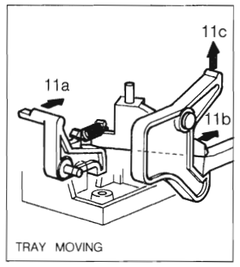
TRAY MOVING IN/OUT TIME

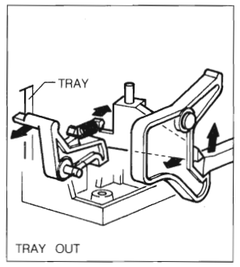
MDA.00862
T22/42

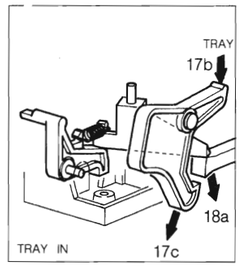
5. FUNCTIONING DRAWING PLAY/TILT

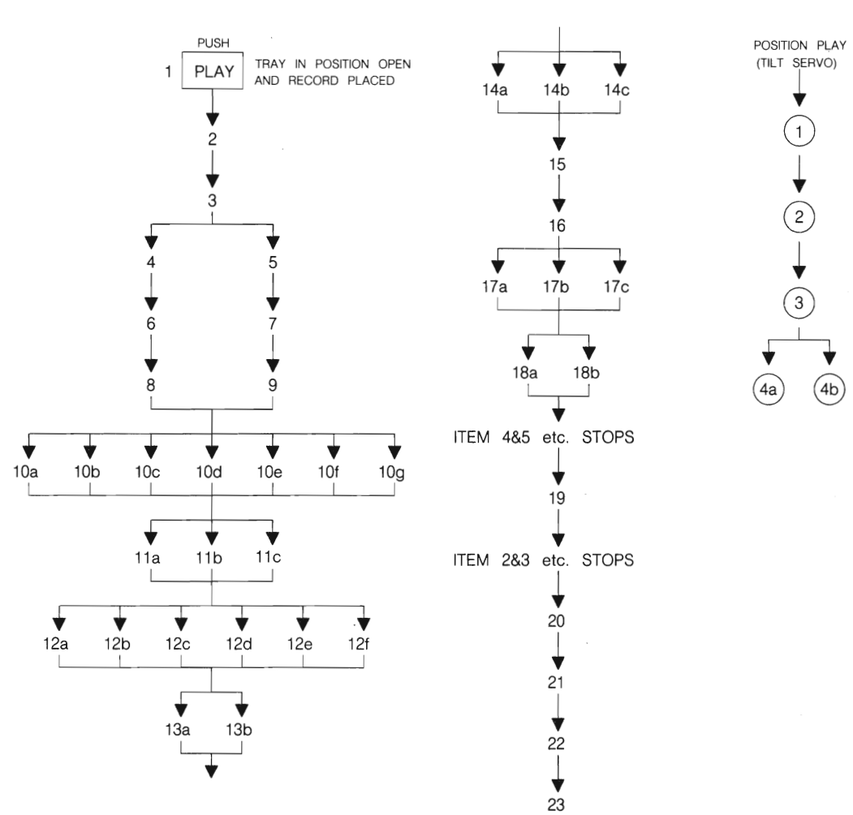


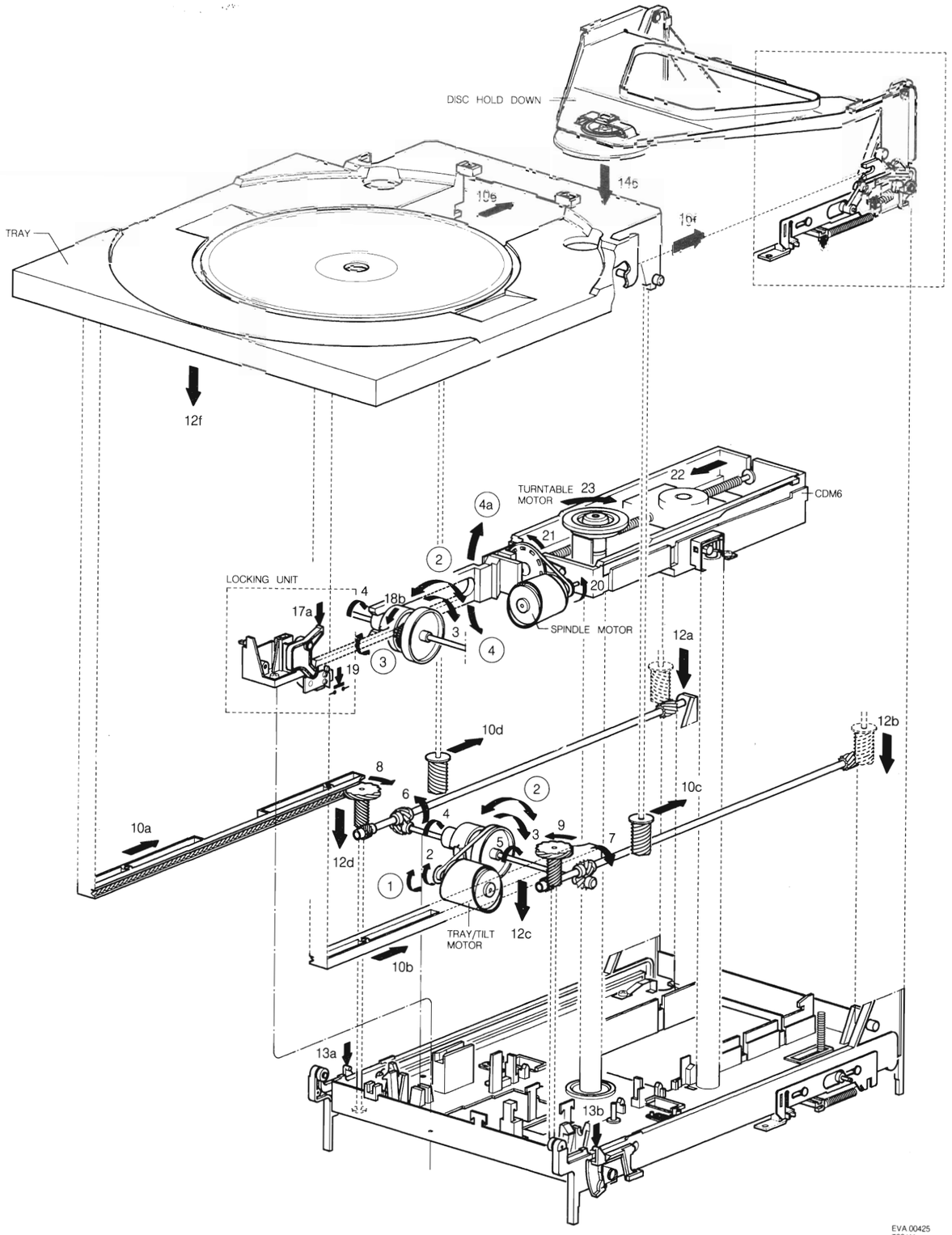




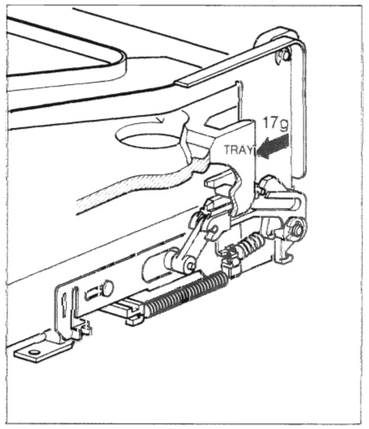


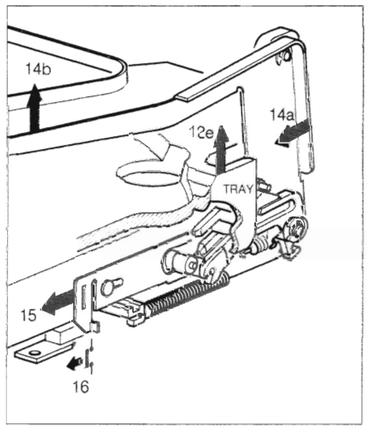


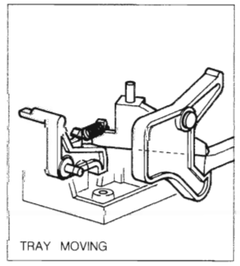


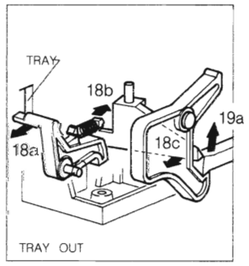


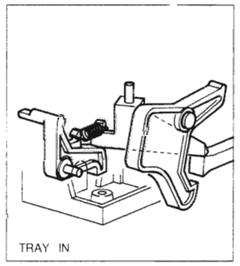
Functioning drawing STOP

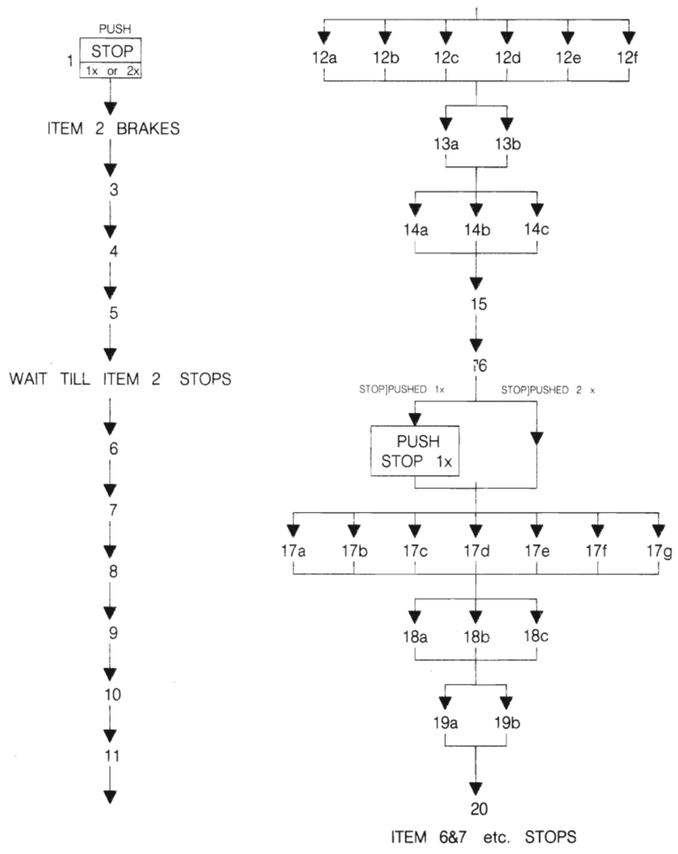


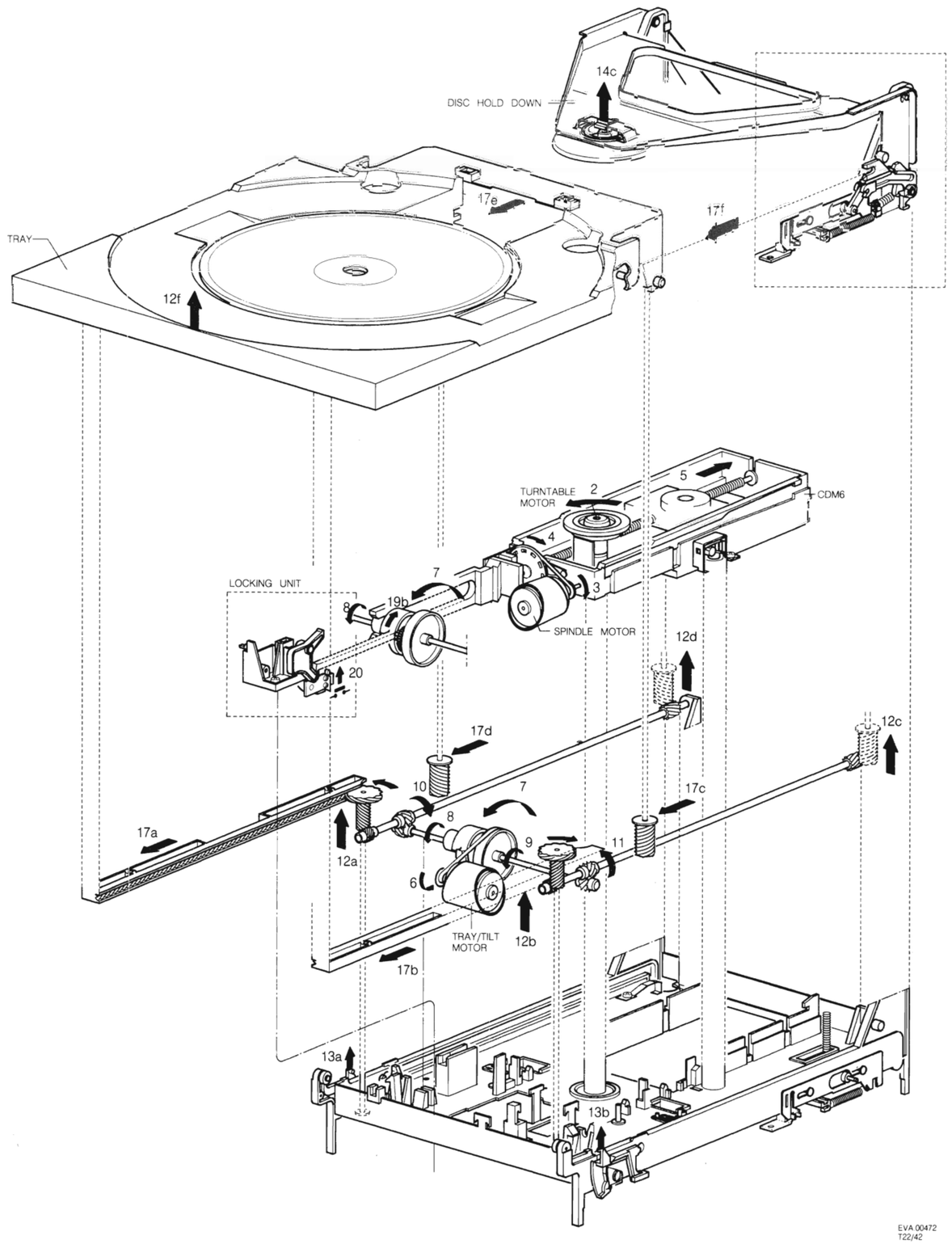






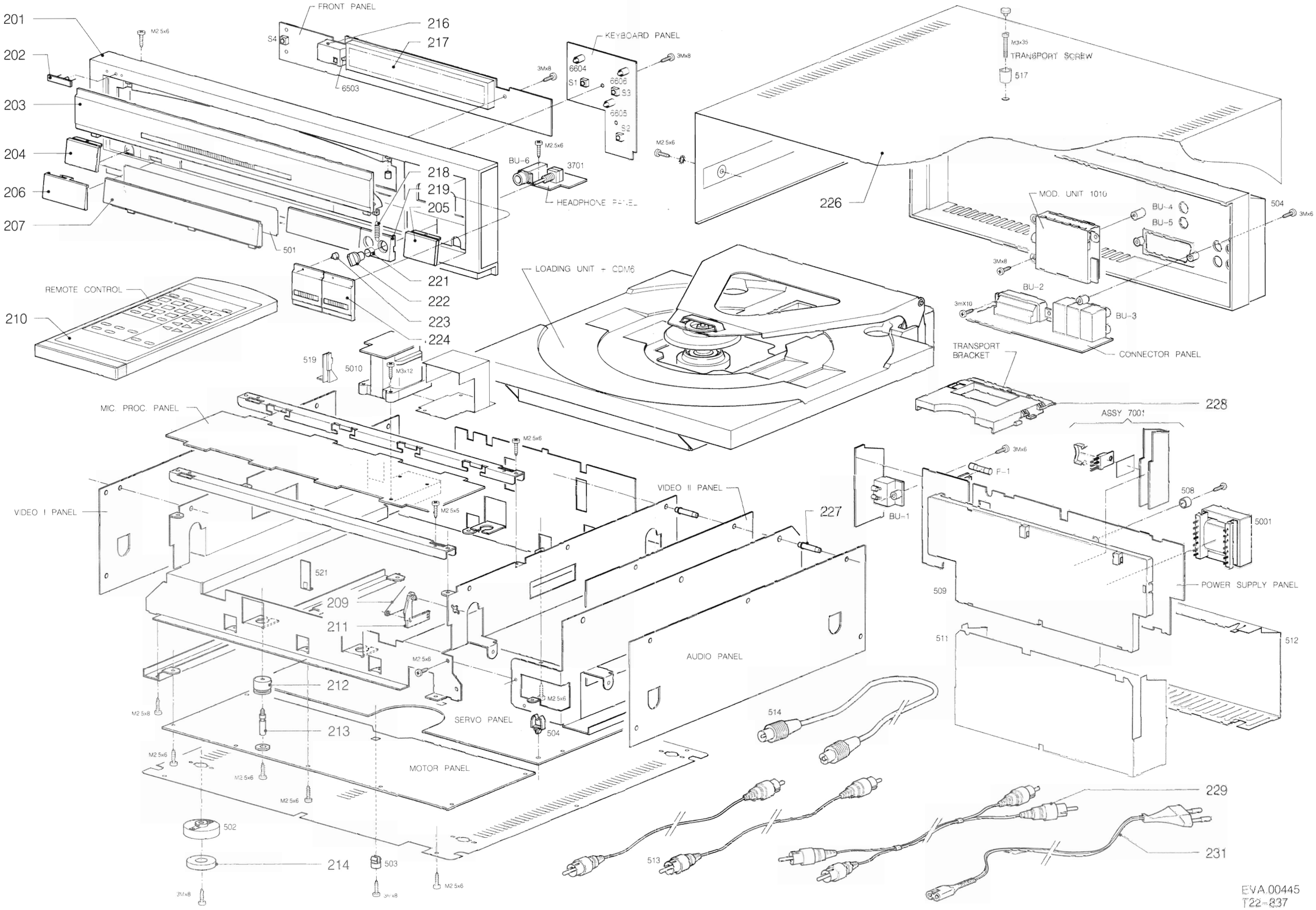






EVA 00472
T22/42

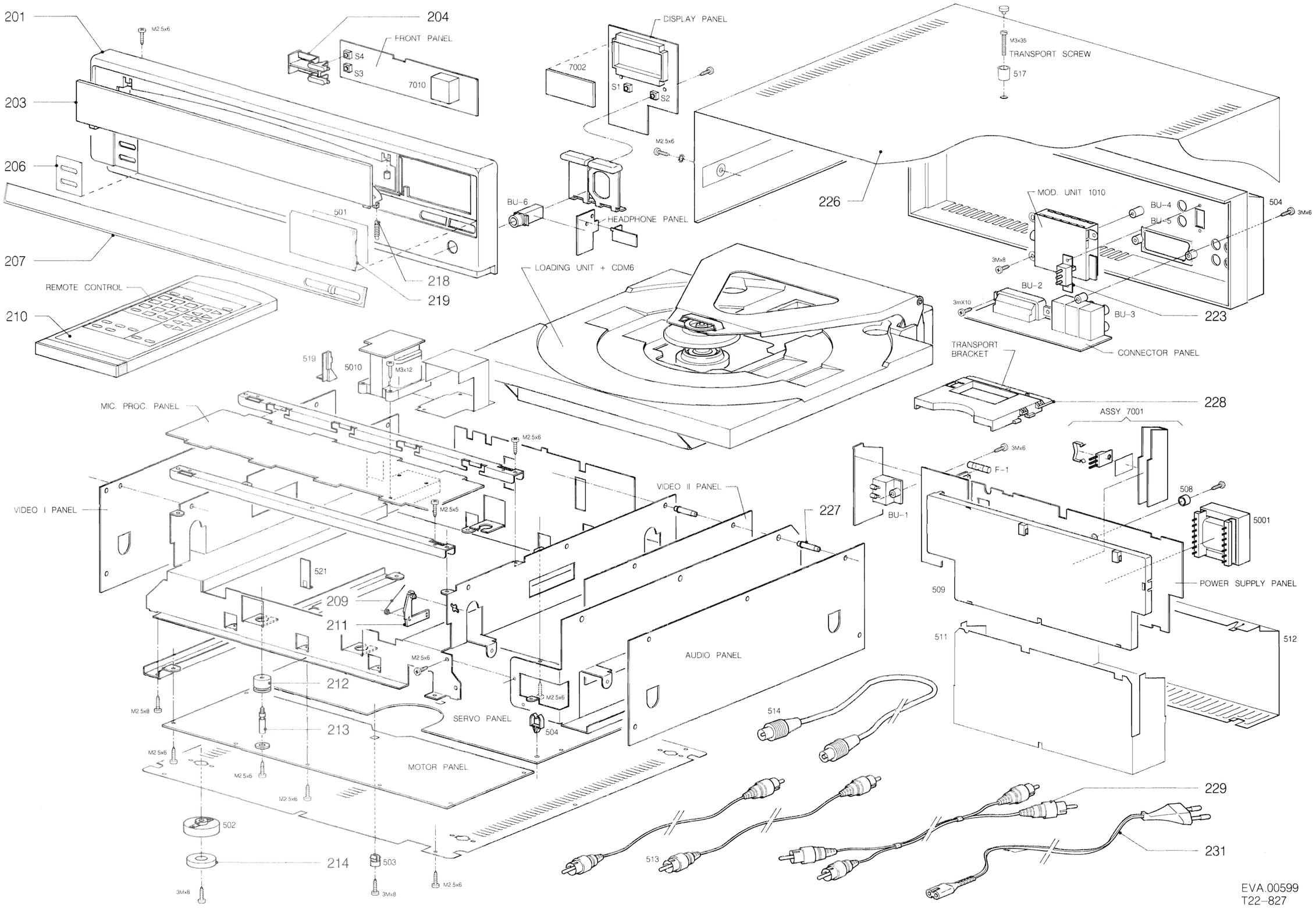
6. EXPLODED VIEW CABINET CDV475



EVA.00445
T22-837

MECHANICAL PARTS CABINET CDV475

Pos	Code number	Descripton
S1	4822 276 11276	SWITCH STOP
S2	4822 276 11276	SWITCH PAUSE
S3	4822 276 11276	SWITCH PLAY
S4	4822 276 11896	SWITCH STANDBY
201	4822 444 40273	FRONT ASSY /95B
201	4822 701 10846	FRONT ASSY SILVER /95S
201	4822 444 40231	FRONT ASSY /00R/02R/05R/13R
202	4822 701 10854	WORDMARK/LOGO /95B/95S
202	4822 459 10771	WORDMARK/LOGO /00R/02R/05R/13R
203	4822 444 60539	DOOR ASSY /00R/02R/05R/13R
203	4822 701 10853	DOOR ASSY /95B/95S
204	4822 701 10851	KNOB ASSY STANDBY /95B/95S
204	4822 410 26187	KNOB ASSY STANDBY /00R/02R/05R/13R
205	4822 701 10852	KNOB ASSY PAUSE /95B/95S
205	4822 410 26187	KNOB ASSY PAUSE /00R/02R/05R/13R
206	4822 454 30396	PLATE /00R/02R/05R/13R
206	4822 701 10848	PLATE /95B/95S
207	4822 381 10937	LENS
209	4822 492 32794	SPRING
210	4822 701 10856	REMOTE CONTROL /95B/95S
210	4822 218 20683	REMOTE CONTROL /00R/02R/05R/13R
211	4822 526 50099	PAWL
212	4822 325 60324	GROMMET
213	4822 502 30524	SREW
214	4822 444 30404	PLATE
216	4822 218 10213	RECEIVER
217	4822 130 90495	DISPLAY 6-BT-1072K
218	4822 492 51956	SPRING
219	4822 701 10849	PLATE /95B/95S
219	4822 454 30397	PLATE /00R/02R/05R/13R
221	5322 492 64624	CLAMPING PIECE
222	4822 413 31495	VOLUME KNOB
223	4822 381 10944	LENS
224	4822 701 10847	KNOB ASSY /95B/95S
224	4822 410 26186	KNOB ASSY /00R/02R/05R/13R
226	4822 444 60599	COVER /95B
226	4822 444 60601	COVER /95S
226	4822 444 60538	COVER /00R/02R/05R/13R
227	4822 402 61155	CLAMP
228	4822 402 61156	BRACKET
229	4822 321 22603	CINCH CABLE
231	4822 321 10522	MAINS CABLE /05R
231	4822 321 10457	MAINS CABLE /00R/02R/13R/95B/95S
B-1	4822 267 30639	MAINS CONNECTOR
B-2	4822 267 60172	SCART CONNECTOR
B-3	4822 267 50801	CINCH CONNECTOR
B-6	4822 267 40661	HEADPHONE CONNECTOR
1010	4822 209 72943	MODULATOR 6 MHZ /05R
1010	4822 214 51691	MODULATOR 5,5MHZ /00R/02R/13R/95B/95S
5010	4822 146 30641	STAND BY TRAFO

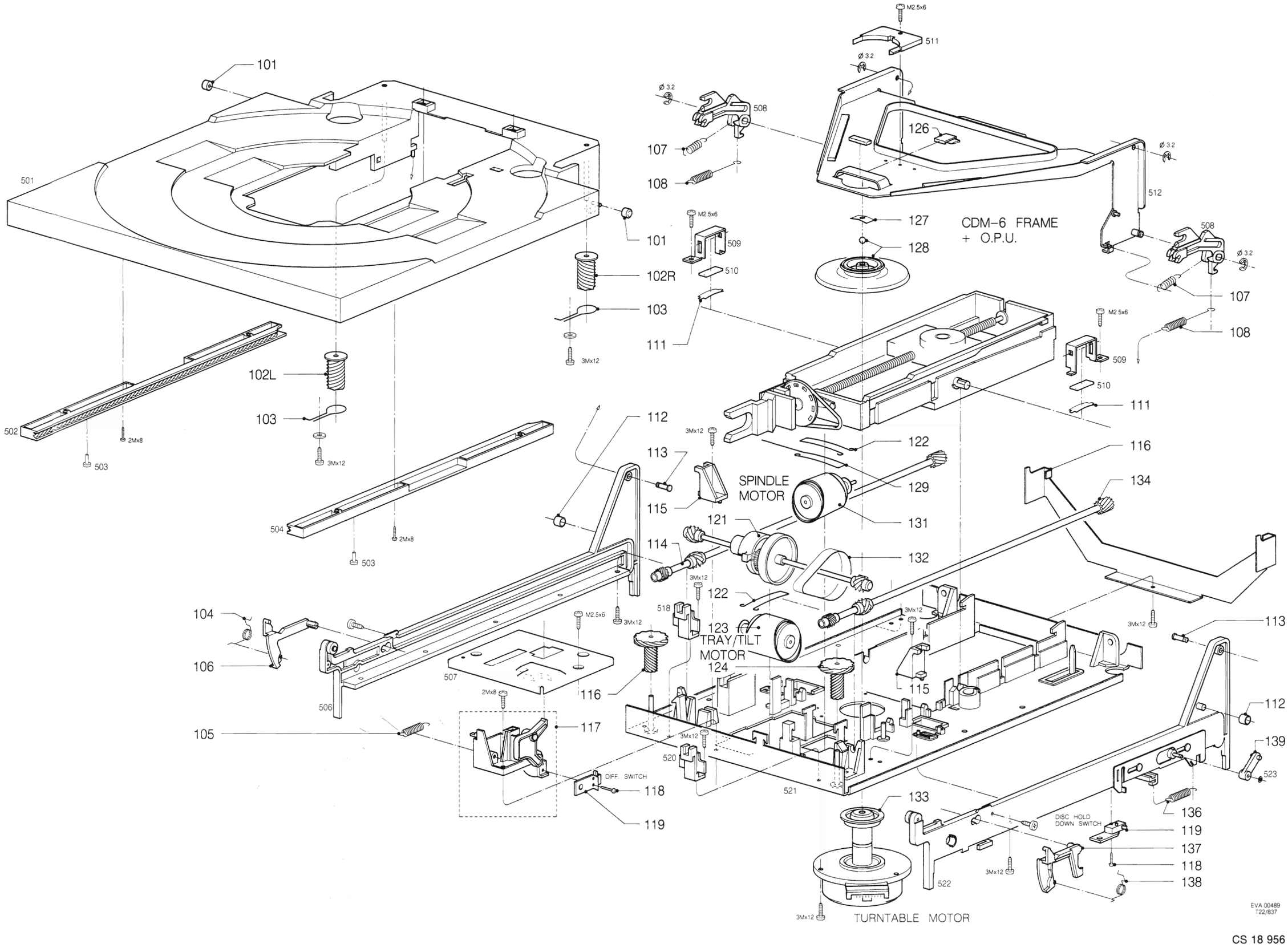


EVA.00599
T22-827

MECHANICAL PARTS CABINET CDV988

Pos	Code number	Descripton
S1	4822 276 11896	SWITCH PUSH PLAY
S2	4822 276 11896	SWITCH PUSH PAUSE
S3	4822 276 11896	SWITCH PUSH STOP
S4	4822 276 11896	SWITCH PUSH STANDBY
201	4822 426 51292	FRONT
203	4822 444 60573	DOOR
204	4822 410 26515	BUTTON POWER
206	4822 454 30409	PLATE ORNAMENT
207	4822 450 61229	WINDOW
209	4822 492 32794	SPRING
210	4822 218 20779	REMOTE CONTROL
211	4822 526 50099	PAWL
212	4822 325 60324	GROMMET
213	4822 502 30524	SCREW
214	4822 454 30387	PLATE
218	4822 492 32882	SPRING
219	4822 381 10998	LENS
223	4822 277 21237	RC-5 SWITCH
224	4822 410 26514	BUTTON
226	4822 444 60575	COVER
227	4822 402 61155	CLAMP
228	4822 402 61156	BRACKET
229	4822 321 22603	CINCH CABLE
231	4822 321 10457	MAINS CABLE /00R
231	4822 321 10522	MAINS CABLE /05R
B-1	4822 267 30639	MAINS CONNECTOR
B–2	4822 267 60172	SCART CONNECTOR
B–3	4822 267 50801	CINCH CONNECTOR
B–6	4822 267 40661	HEADPHONE CONNECTOR
1010	4822 209 72943	MODULATOR 6 MHZ /05R
1010	4822 214 51691	MODULATOR 5,5MHZ /00R
5010	4822 146 30641	STAND BY TRAFO

EXPLODED VIEW LOADING



CS 18 956

PARTSLIST LOADING

Item	Code number	Description
101	4822 528 70506	
102	4822 522 32375	RIGHT BLACK
102	4822 522 32374	LEFT WHITE
103	4822 492 63788	
104	4822 492 63786	LEFT
105	4822 492 32506	
106	4822 402 61129	
107	4822 492 32867	SPRING
108	4822 492 32783	
111	4822 492 63791	
112	4822 532 51518	
113	4822 535 92392	
114	4822 535 92394	LEFT WHITE
116	4822 522 32372	LEFT WHITE
117	4822 402 30166	
118	4822 502 30505	M 1.6X10
119	4822 271 30597	DIFFERENTIAL SWITCH
121	4822 522 20388	
122	4822 492 63784	
123	4822 361 21025	TRAYTILT MOTOR
124	4822 522 32373	RIGHT BLACK
126	4822 535 92404	
127	4822 492 63823	
128	4822 528 60325	
129	4822 492 63787	
131	4822 361 21038	SPINDLE MOTOR.
132	4822 358 10116	
133	4822 361 21035	TURNTABLE MOTOR ASSY
134	4822 535 92395	RIGHT BLACK
136	4822 492 32781	
137	4822 402 61128	
138	4822 492 63785	RIGHT
139	4822 402 61125	

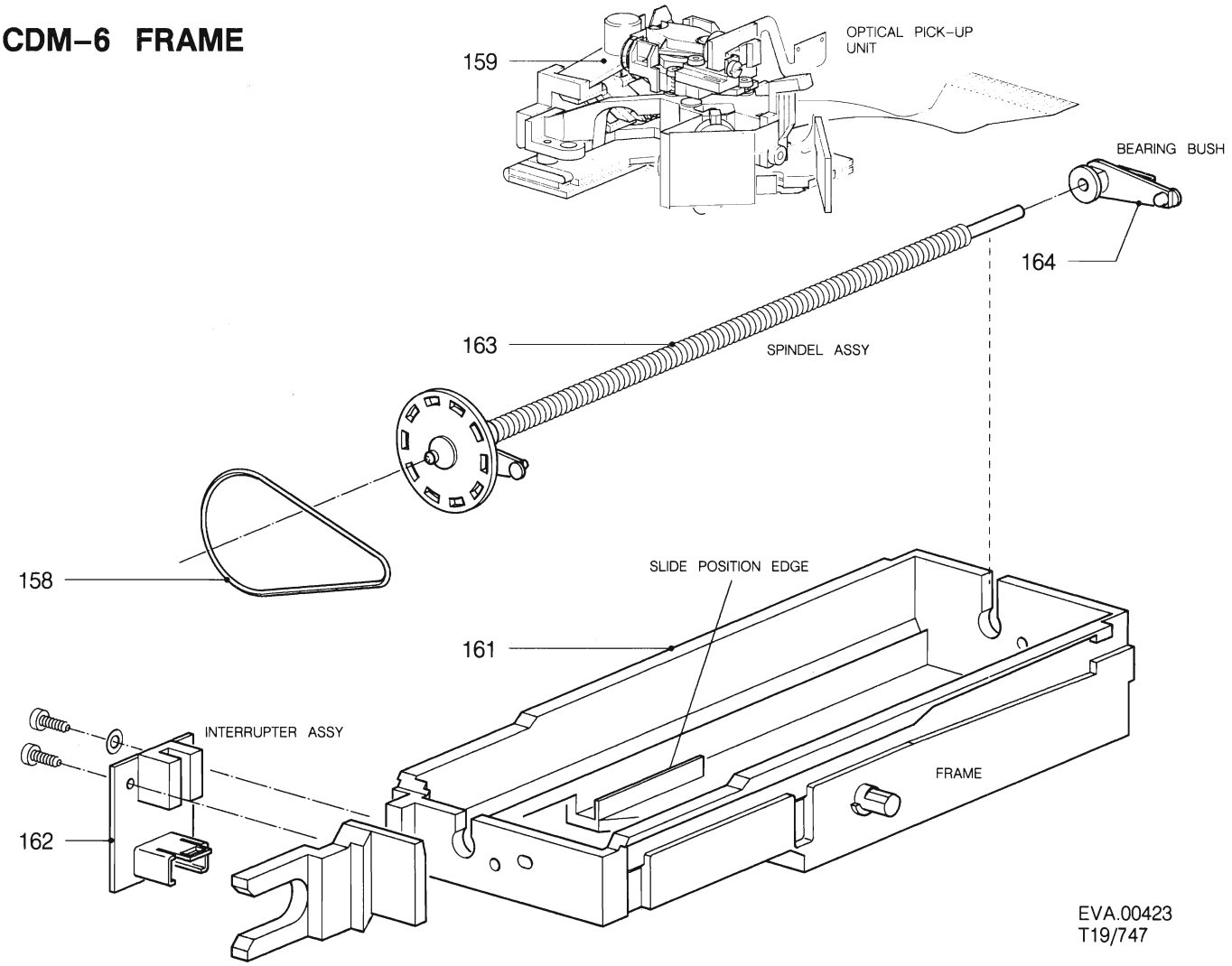
MECHANICAL PARTS CDM 6

Item	Codenumber	
158	4822 358 10117	
161	4822 464 50686	
162	4822 214 51669	
163	4822 535 92409	
164	4822 520 30451	
159	4822 691 30195	158+161+162+163+164

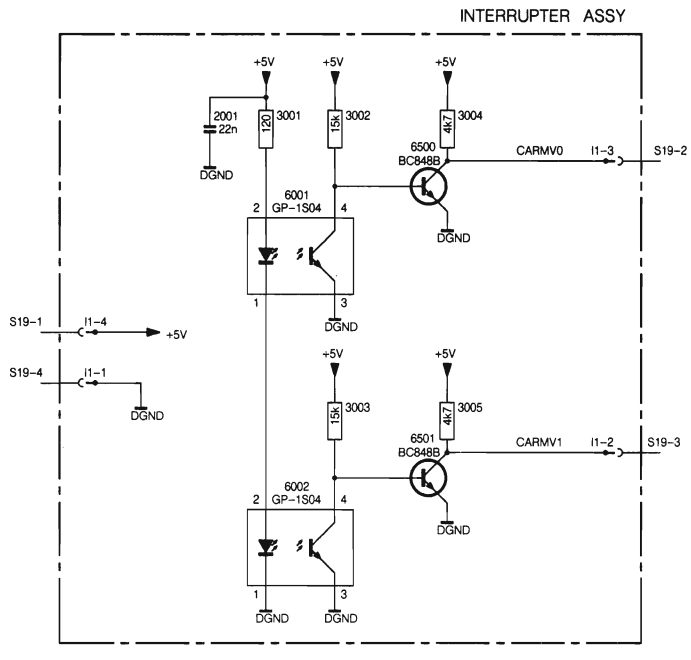
Interrupterpanel		
Various		
6001	4822 130 32114	GP-1S04
6002	4822 130 32114	GP-1S04

EXPLODED VIEW CDM

CDM-6 FRAME

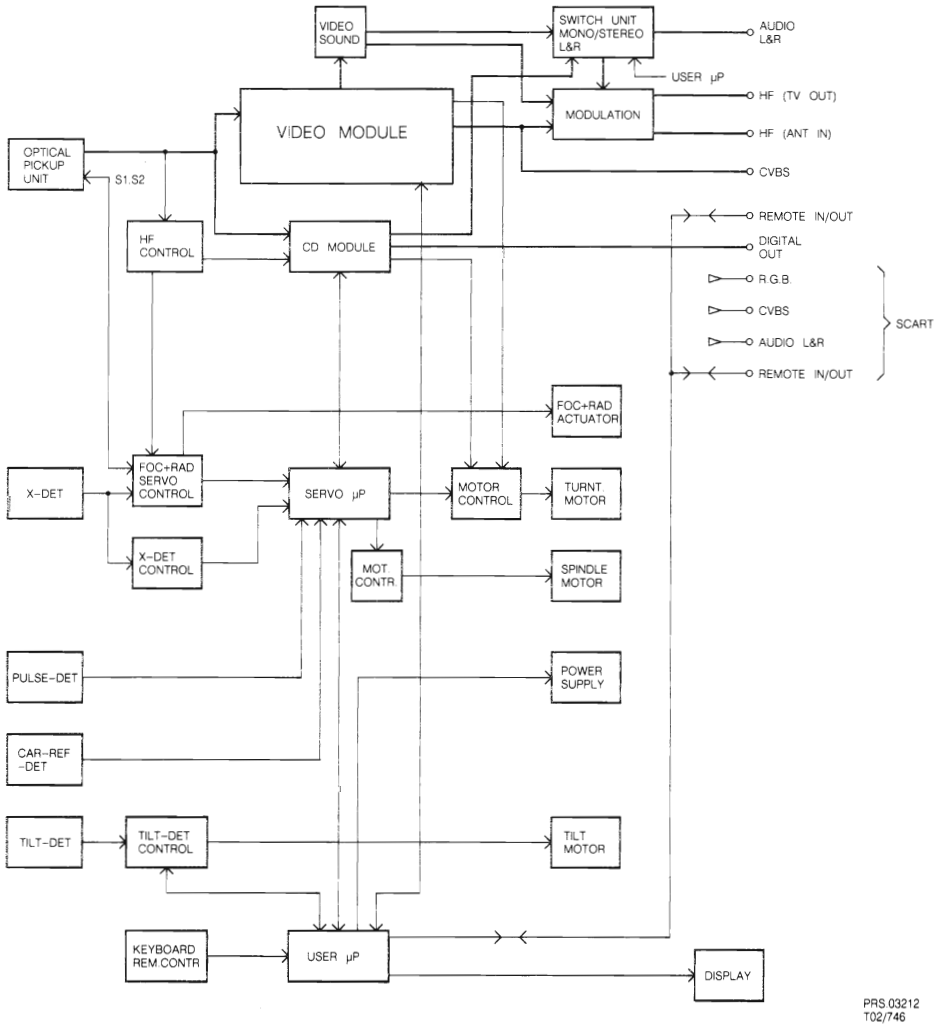


CIRCUIT DIAGRAM INTERRUPTER PANEL



PRS.03955
T12 /811

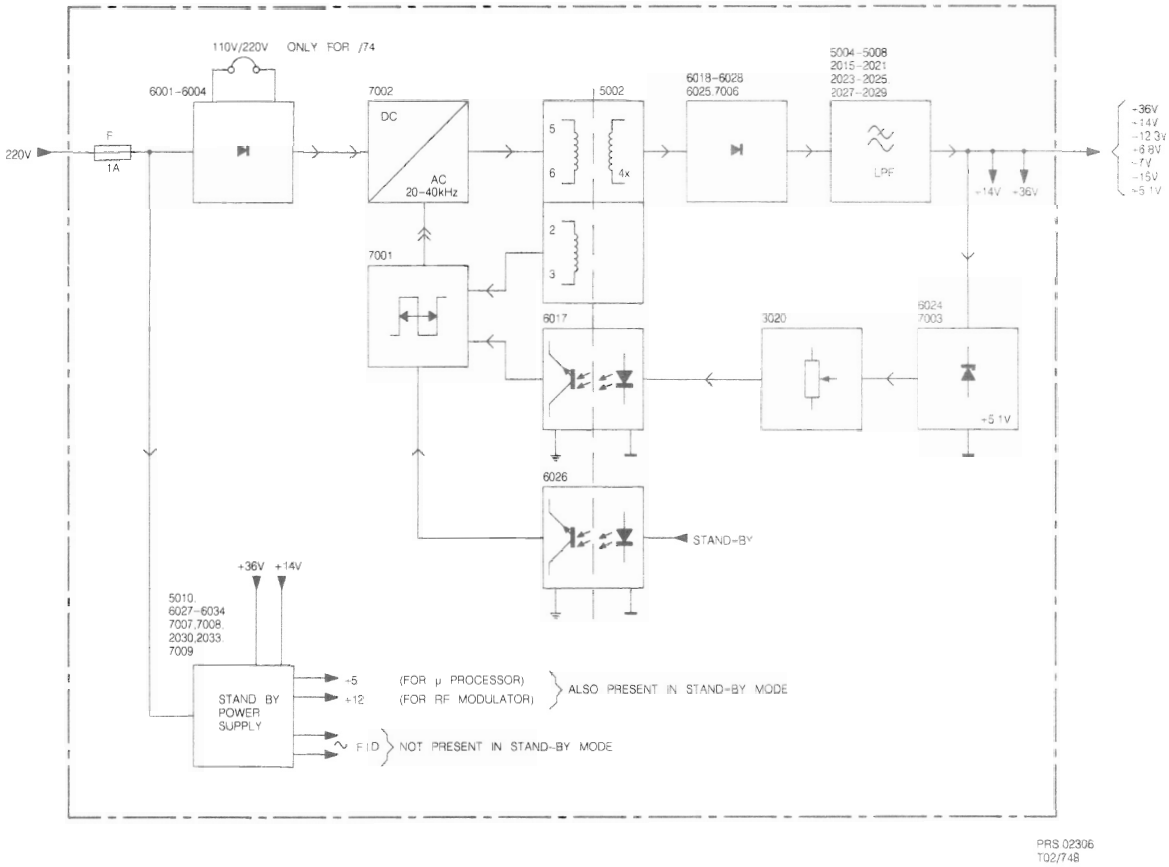
7. OVERALL BLOCKDIAGRAM



PRS.03212
T02/746

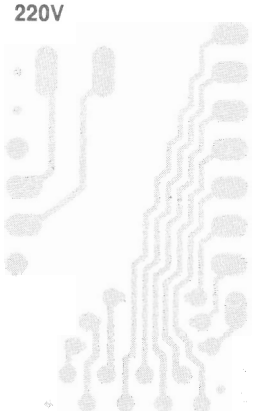
8. POWER SUPPLY

BLOCKDIAGRAM POWER SUPPLY

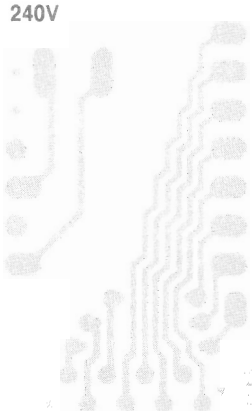


STANDBY TRANSFORMER PANEL

220V



240V



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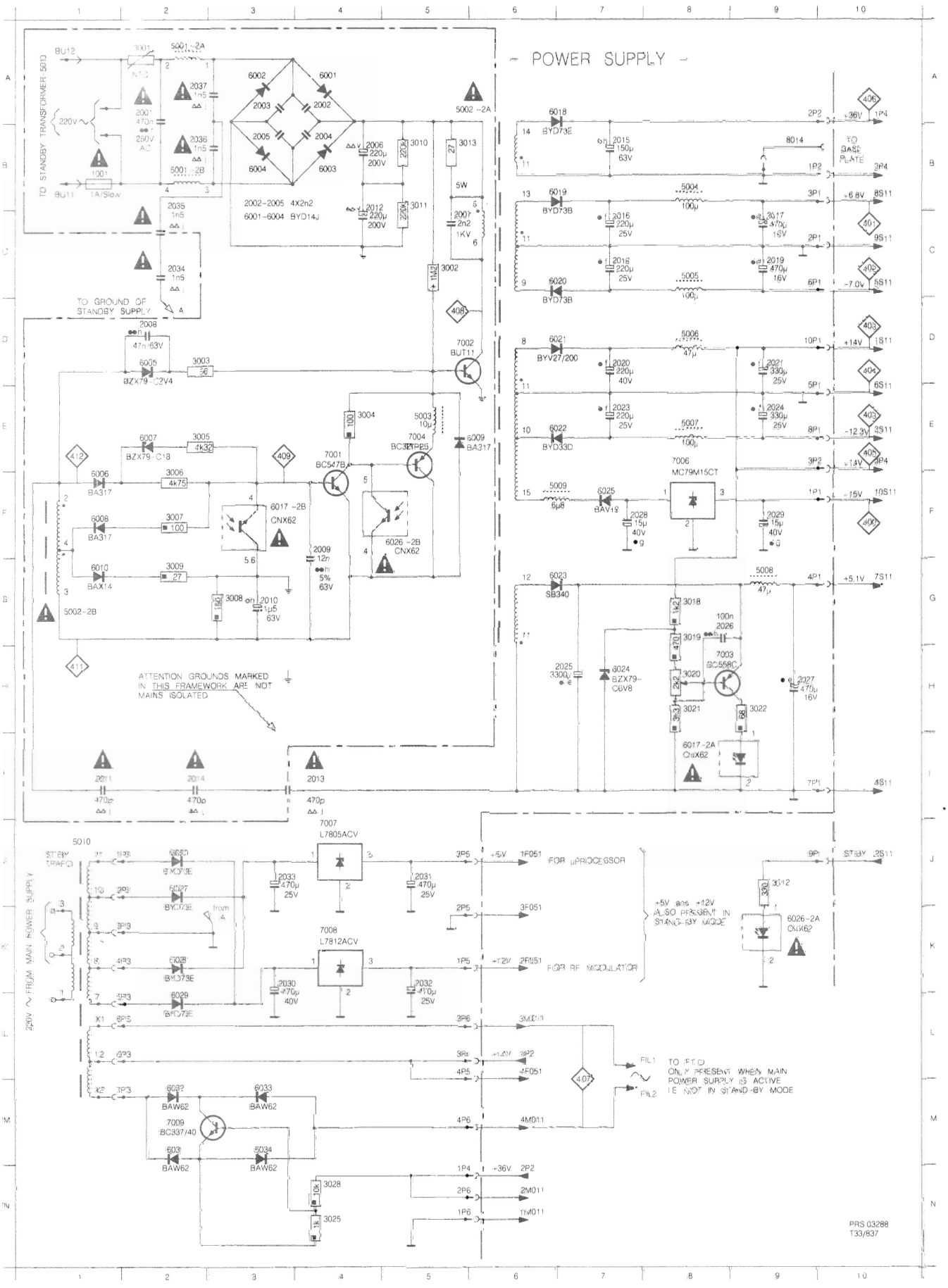
2001	A 2	2009	F 4	2017	C 9	2026	G 8	2034	C 2	3005	E 2	3013	B 6	5001	A 2	5007	E 8	6005	D 2	6018	A 7	6026	F 5	6033	M 3	7008	K 4
2002	A 4	2010	G 3	2018	C 7	2027	H 9	2035	B 2	3006	F 2	3018	G 8	5001	B 2	5008	G 9	6006	F 1	6019	B 7	6026	K 9	6034	M 3	7009	M 2
2003	A 3	2011	I 1	2019	C 9	2028	F 7	2036	B 2	3007	F 2	3019	G 8	5002	A 5	5009	F 7	6007	E 2	6020	C 7	6027	J 2	7001	E 4		
2004	B 4	2012	B 4	2020	D 7	2029	F 9	2037	A 2	3008	G 3	3020	H 8	5002	G 1	5010	J 1	6008	F 1	6021	D 7	6028	K 2	7002	D 5		
2005	B 3	2013	I 4	2021	D 9	2030	K 3	3001	A 2	3009	G 2	3021	H 8	5003	E 5	6001	A 4	6009	E 6	6022	E 7	6029	L 2	7003	H 8		
2006	B 4	2014	I 2	2023	E 7	2031	J 5	3002	C 5	3010	B 5	3022	H 9	5004	B 8	6002	A 3	6010	G 1	6023	G 7	6030	J 2	7004	E 5		
2007	C 5	2015	B 7	2024	E 9	2032	K 5	3003	D 2	3011	B 5	3025	N 4	5005	C 8	6003	B 4	6017	F 3	6024	H 7	6031	M 2	7006	E 8		

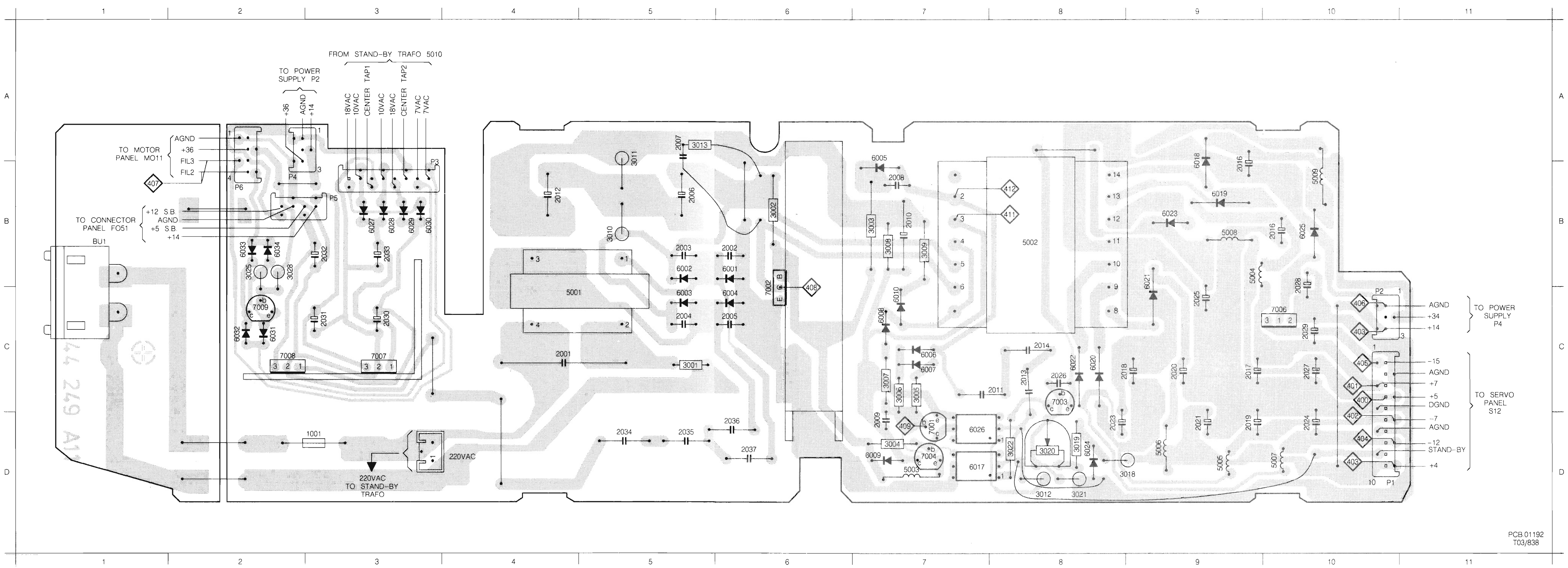


PRINT LAY-OUT

 8-2

1001	D 3	2004	C 5	2008	B 7	2012	B 4	2016	B 9	2020	C 9	2025	C 9	2029	C10	2033	B 3	2037	D 6	3004	D 7	3008	B 7	3012	D 8	3020	D 8
2001	C 4	2005	C 6	2009	D 7	2013	C 8	2017	C 9	2021	D 9	2026	C 8	2030	C 3	2034	D 5	3001	C 5	3005	C 7	3009	B 7	3013	A 5	3021	D 8
2002	B 6	2006	B 5	2010	B 7	2014	C 8	2018	C 8	2023	D 8	2027	C10	2031	C 3	2035	D 5	3002	B 6	3006	C 7	3010	B 5	3018	D 9	3022	D 8
2003	B 5	2007	A 5	2011	C 8	2016	B10	2019	D 9	2024	D10	2028	B10	2032	B 3	2036	D 6	3003	B 7	3007	C 7	3011	A 5	3019	D 8	3025	B 2

3028	B 2	5004	B 9	5008	B 9	6003	C 5	6007	C 7	6017	D 7	6021	B 9	6025	B10	6029	B 3	6033	B 2	7003	C 8	7008	C 2	P2	C10	P6	B 2
5001	C 4	5005	D 9	5009	B10	6004	C 6	6008	C 7	6018	A 9	6022	C 8	6026	D 7	6030	B 3	6034	B 2	7004	D 7	7009	C 2	P3	B 4		
5002	B 8	5006	D 9	6001	B 6	6005	A 7	6009	D 7	6019	B 9	6023	B 9	6027	B 3	6031	C 2	7001	D 7	7006	C10	BU1	B 1	P4	B 2		
5003	D 7	5007	D10	6002	B 5	6006	C 7	6010	C 7	6020	C 8	6024	D 8	6028	B 3	6032	C 2	7002	B 6	7007	C 3	P1	D10	P5	B 3		



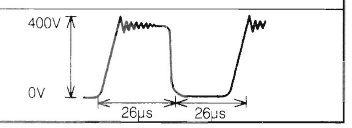
MEASUREMENTS & ADJUSTMENTS

FAULT FINDING POWER SUPPLY

2010	SHORT CIRCUITED	OSCILLATOR DOES NOT START UP
	INTERRUPTED	HIGH TONE
5002 SEC.WINDING	SHORT CIRCUITED	OSCILLATOR DOES NOT START UP
6026	PRIM/SEC INTERRUPTED	OSCILLATOR START UP
	PRIM/SEC SHORT CIRCUIT	OSCILLATOR START UP
6024	SHORT CIRCUITED	OSCILLATOR START UP
7003	CE SHORT CIRCUITED	OSCILLATOR START UP
6018–6023	SHORT CIRCUITED	OSCILLATOR DOES NOT START UP
7001 OR 6009	SHORT CIRCUITED	OSCILLATOR DOES NOT START UP
6005 OR 2008	SHORT CIRCUITED	OSCILLATOR DOES NOT START UP
6007 OR 6008	SHORT CIRCUITED	OSCILLATOR START UP

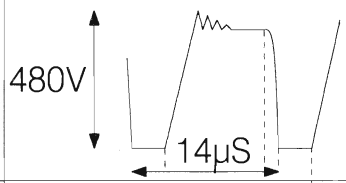
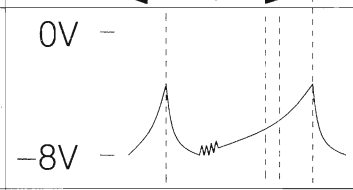
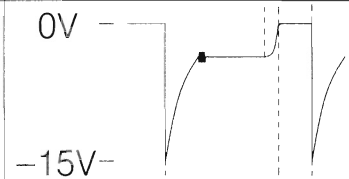
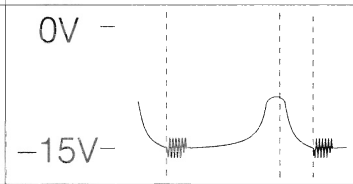
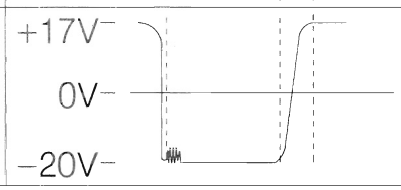
MDA.01559
T28/837

SERVICING HINTS POWER SUPPLY

STEP	COMPONENT	MODE	
1		POWER SUPPLY OPERATES ONLY WITH SECUNDARY LOAD!	
2	SECUNDARY LOAD	CHECK FOR SHORT CIRCUIT SECUNDARY SIDE 5002	
3	7001	INTERRUPT BASIS	
4		MAINS INPUT 80V AC VIA VARIAC	
5	C–7002 408	OSCILLATOR START UP	

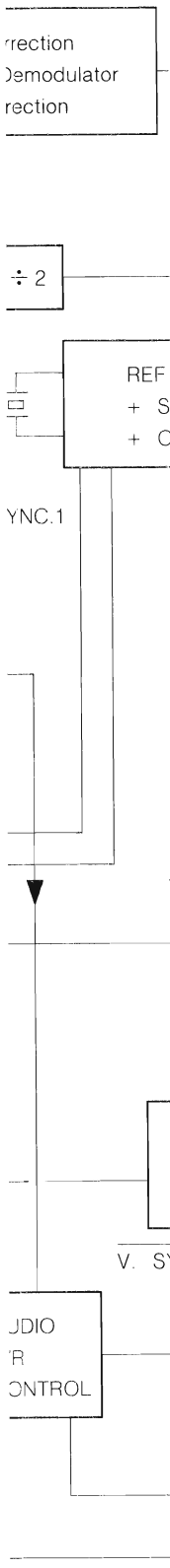
MDA.01558
T28/837

MEASUREMENTS & ADJUSTMENTS

STEP	SIGNAL	MODE	◇				REMARKS
1	+5	"ON"	400	3020	5.1V ± 0.025V		
	+6.8	"ON"	401		+6.77± 0.10		
	−7.0	"ON"	402		−6.99± 0.10		
	+1.4	"ON"	403		+13.97± 0.15		
	−12.3	"ON"	404		+12.33± 0.15		
	−15	"ON"	405		−15.0± 0.75		
	+36	"ON"	406		+36.14± 0.40		
	+5.4AE	"ON"	407		+5.3± 0.30AC		
	UCE 7002	"ON"	408				
	UB 7001		409				
	UB 7002		410				
	3−5002		411				
	2−5002		412				

MDA.01561
T07−837

AGRAM



POWERSUPPLY 3122 137 21170

1001	4822 253 30021	FUSE 1.0 A SLOW
2001	4822 121 50627	POLCAP 250V 470NPM10
2006	4822 124 22354	ELCAP 200V 220MPM20
2007	4822 122 32071	1KV 2N2 PM10
2009	4822 121 51165	12N PM5
2011	4822 122 33284	470P PM20
2012	4822 124 22354	ELCAP 200V 220MPM20
2013	4822 122 33284	470P PM20
2014	4822 122 33284	470P PM20
2025	4822 124 22352	ELCAP 16V 3300 µF PM20
3001	4822 116 30069	NTC 82R/25PQPM20
3005	4822 116 80507	4K32 PM1
3006	4822 116 80507	4K75 PM1
3010	5322 116 60459	220K PM5
3011	5322 116 60459	220K PM5

Various

5001	4822 142 40315	MAINS FILTER
5002	4822 146 30617	TRANSFORMER
5010	4822 146 30641	STANDBY TRAFO

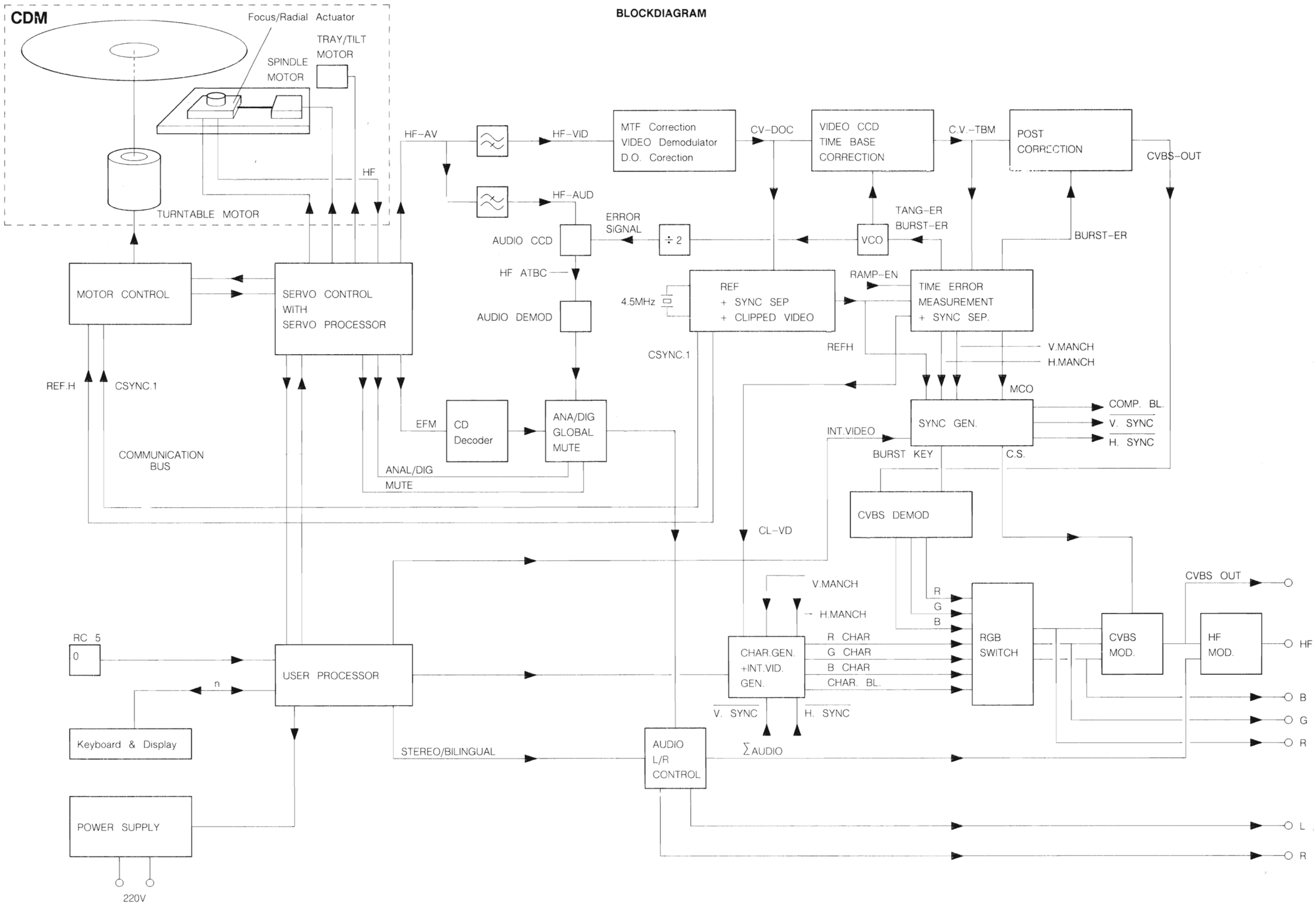
4822 130 80229	BYD14J
4822 130 30847	BA317
4822 130 34193	BAX 14
4822 130 60779	BYD73E
4822 130 60778	BYD73B
4822 130 42488	BYD33D
4822 130 32715	SB 340
4822 130 30967	BAV19
4822 130 31253	BZX79-C2V4
4822 130 31024	BZX79-C18
4822 130 34278	BZX79-C6V8
4822 130 40959	BC547B
4822 130 42229	BUT11
5322 130 60068	BC558C
4822 130 41246	BC327-25
4822 130 41344	BC337-40
5322 209 86361	MC79M15CT
4822 209 72743	L7805
4822 209 72742	L7812
4822 130 90121	CNX62

CDM

RE

Block d
CDV co

BLOCKDIAGRAM



Block diagram
CDV combi player

MDA 00908
T28/801

MEASUREMENTS & ADJUSTMENTS VIDEO & MTF

STEP	SIGNAL	MODE	◇				REMARKS
1	HF.IN	STOP	100	5106		MIN. AMPLITUDE	DISCONNECTED V24 INJECT 875 kHz ≈80m Vpp IN 2V24
2	MTF 8MHz ADJ.	STOP	101	5107		MAX. AMPLITUDE	DISCONNECTED V24 INJECT 8 kHz ≈40m Vpp IN 2V24
3	AUDIO 2.8MHz SUPPRESSION	STOP	102	5102		MIN. AMPLITUDE	DISCONNECTED V24 INJECT 2.8 kHz ≈40mVpp
4	MTF GAIN	VIDEO TEST DISC PICT.NR. 515 STILL PICTURE	103	3145		SEE DRAWING MDA.01556	ADJUST FOR MULTI BURST ± MULTI BURST VI

MEASUREMENTS & ADJUSTMENTS DROP-OUT CIRCUIT

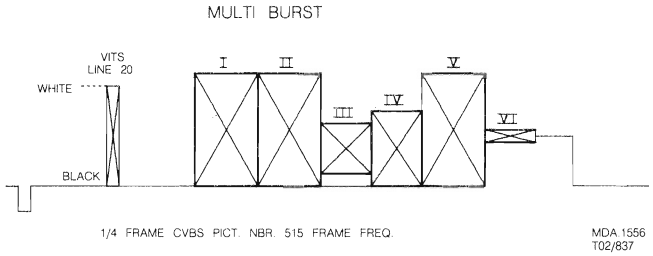
STEP	SIGNAL	MODE	◇				REMARKS
1	FREQUENCY	STOP	109	5105	FREQUENCY COUNTER 13.3MHz		COARSE
2	DELAY-TIME	VIDEO TEST DISC. PICT.NBR. 10800	A=103 B=111	5105		A CHANNEL B CHANNEL	FINE ADJUST DELAY TIME BETWEEN EA AND B FOR 64μ s
3	AMPLITUDE DELAYED VIDEO	VIDEO TEST DISC. PICT.NR. 10800	A=103 B=111	3131		A CHANNEL B CHANNEL	ADJUSTMENT THE AMPLITUDE TO BE EQUAL FOR A AND B

MEASUREMENTS & ADJUSTMENTS VIDEO

STEP	SIGNAL	MODE	◇				REMARKS
1	DC-LEVEL	VIDEO TEST DISC PICT.NBR. 6000 STILL PICTURE	104	3210		2.2V	
2	VIDEO AMPLITUDE	VIDEO TEST DISC PICT.NBR. 6000 STILL PICTURE	106	3152		U=1.2Vpp	
3	VIDEO AMPLITUDE	VIDEO TEST DISC PICT.NBR. 6000 STILL PICTURE	107			U=1.85Vpp-2Vpp	
4	VIDEO AMPLITUDE	VIDEO TEST DISC PICT.NBR. 6000 STILL PICTURE	108			U=2.7Vpp-3Vpp	

MEASURUMENTS & ADJUSTMENTS TIME-BASE CONTROL

STEP	SIGNAL	MODE	◇				REMARKS
1	FREQUENCY	STOP	112	2313	FREQUENCY COUNTER		AFTER 2 MINUTES WARMING UP 15.625,024- 15.624.975Hz
2	VCO	STOP 9-7006 GROUNDED TO EARTH	103 104	3234		A- CHANNEL B- CHANNEL	DELAY TIME BETWEEM A AND B ±70μ s
3	SPECIAL BURST SUPPRESSION	VIDEO TEST DISC PICR.NBR. 750	114 116	5113		TRIGGER SIGNAL 116	MIN. AMPLITUDE OF THE SPECIAL BURST
4	SPECIAL BURST AMPLITUDE	VIDEO TEST DISC. PLAY	117	5401			MAX. AMPLITUDE OP SPECIAL BURST
5	BURST ERROR	VIDEO TEST DISC PICR.NBR. 170 STILL PICTURE		2369			MIN. STRIPES IN RED PICTURE ON TV SREEN
	BURSTKEY	PLAY	118			8.5V ±1V	
	C. SYNC	PLAY	116			5V±1V	
	H. MANCH.	PLAY	119			5V+250mV -500mV	15625Hz ±1kHz
	V. MANCH.	PLAY	121			5V+250mV -500mV	50Hz ±5Hz
	MCO	PLAY	122			10V±1.5V	DUTY CYCLE 32μ s ± 8μs


MULTI BURST
VITS
LINE 20
WHITE
BLACK
I
II
III
IV
V
VI
1/4 FRAME CVBS PICT. NBR. 515 FRAME FREQ.
MDA.1556
T02/837

1001	4822 242 70361	X-TAL 4.5 MHZ	

	4822 122 33325	CHIP 470N 16V
	4822 122 10166	TUBULAR 22N 16V
	4822 122 33142	POLYESTER 6P8
	4822 122 33141	POLYESTER 3P3
	4822 122 32148	POLYESTER 5P6
	4822 125 50062	TRIMMING CAPACITOR 10PF
	5322 122 32933	1NF 5%NP0 50V
	4822 122 32891	POLYESTER 68N 50V

	4822 111 30517	SAFETY RESISTOR 22E	
	4822 111 30508	SAFETY RESISTOR 10E	
	4822 111 30526	SAFETY RESISTOR 47E	
	4822 111 30513	SAFETY RESISTOR 15E	
	4822 111 30524	SAFETY RESISTOR 39E	
3131	4822 100 11214	TRIMMING POTENTIOMETER	1K
3145	5322 101 14008	TRIMMING POTENTIOMETER	2K2
3152	4822 100 10254	TRIMMING POTENTIOMETER	1K
3210	4822 100 11214	TRIMMING POTENTIOMETER	1K
3234	4822 101 10859	TRIMMING POTENTIOMETER	10K
3269	4822 100 11214	TRIMMING POTENTIOMETER	1K

5101	4822 157 53266	COIL 3µH
5102	4822 156 10994	COIL 87µH
5103	4822 156 11007	COIL 212µH
5104	4822 156 11007	COIL 212µH
5105	4822 156 10997	COIL 1.7µH
5106	4822 156 21054	COIL 87µH
5107	4822 156 21147	COIL 7.2µH
5112	4822 156 21026	COIL 34 µH
5113	4822 156 21026	COIL 34 µH
5201	4822 156 11002	COIL 7.7µH
5202	4822 156 10998	COIL 3 µH
5203	4822 156 11001	COIL 6 µH
5204	4822 156 11001	COIL 6 µH
5205	4822 156 11001	COIL 6 µH
5206	4822 156 11001	COIL 6 µH
5207	4822 156 11001	COIL 6 µH
5208	4822 156 10998	COIL 3 µH
5401	4822 156 11003	COIL 12µH
5111	4822 320 40081	DELAY LINE 470 NSEC
5114	4822 157 53267	LOWPASSFILTER 5.5MH

	4822 130 30621	1N4148
	4822 130 32227	BB112

6101	4822 130 33294	HZ9A2 8V2
6201	5322 130 34865	BZV46 1V5
6202	4822 130 33294	HZ9A2 8V2
6209	4822 130 32566	HZ11A3 10V0
6212	4822 130 32697	HZ6A3 5V6
6213	4822 130 32697	HZ6A3 5V6
6407	4822 130 32698	HZ6C2 6V2
6410	5322 130 32026	HZ12B2
7001	4822 209 72757	IC TDA3731/N1
7002	4822 209 11412	TL8704P
7003	4822 209 71275	CXL5001
7004	5322 209 82575	PC74HC74P
7005	4822 209 71316	UAA1031
7006	4822 209 71825	PA0017
7007	4822 209 71276	CXL1004
7008	4822 209 71316	UAA1031
7009	4822 209 81349	MC1458P1 (MTLA)
7010	4822 209 10247	MC14011BCP
7011	5322 209 10357	HEF4066BP
7012	4822 209 10866	HEF4428BP
7013	4822 209 10053	MC14081BCP
7014	4822 209 10247	MC14011BCP
7015	4822 209 71382	MC34002BP
7016	4822 209 71382	MC34002BP
7017	4822 209 10866	HEF4428BP
7018	4822 209 81091	MC14538BCP

	4822 130 42353	BFS19
	4822 130 42131	BF550
	5322 130 41982	BC848B
	4822 130 44196	BC548C
	4822 130 60516	BC859C
	4822 130 42513	BC858C
	5322 130 44336	BSV52
	5322 130 41983	BC858B
	4822 130 40938	BC548
	4822 130 42711	BC849B
	4822 130 41594	PH2369
	4822 130 60511	BC847B
	5322 130 44647	BC368

6101	4822 130 33294	HZ9A2 8V2
6201	5322 130 34865	BZV46 1V5
6202	4822 130 33294	HZ9A2 8V2
6209	4822 130 32566	HZ11A3 10V0
6212	4822 130 32697	HZ6A3 5V6
6213	4822 130 32697	HZ6A3 5V6
6407	4822 130 32698	HZ6C2 6V2
6410	5322 130 32026	HZ12B2
7001	4822 209 72757	IC TDA3731/N1
7002	4822 209 11412	TL8704P
7003	4822 209 71275	CXL5001
7004	5322 209 82575	PC74HC74P
7005	4822 209 71316	UAA1031
7006	4822 209 71825	PA0017
7007	4822 209 71276	CXL1004
7008	4822 209 71316	UAA1031
7009	4822 209 81349	MC1458P1 (MTLA)
7010	4822 209 10247	MC14011BCP
7011	5322 209 10357	HEF4066BP
7012	4822 209 10866	HEF4428BP
7013	4822 209 10053	MC14081BCP
7014	4822 209 10247	MC14011BCP
7015	4822 209 71382	MC34002BP
7016	4822 209 71382	MC34002BP
7017	4822 209 10866	HEF4428BP
7018	4822 209 81091	MC14538BCP

4822 130 42353	BFS19
4822 130 42131	BF550
5322 130 41982	BC848B
4822 130 44196	BC548C
4822 130 60516	BC859C
4822 130 42513	BC858C
5322 130 44336	BSV52
5322 130 41983	BC858B
4822 130 40938	BC548
4822 130 42711	BC849B
4822 130 41594	PH2369
4822 130 60511	BC847B
5322 130 44647	BC368

VIDEO I

FROM SERVO PANEL S18

FROM SERVO PANEL S21

SUBPANEL 1002A

5114 SUBPANEL 0055 OR TDK LPF 5,5MHz

VIDEO AMPL ADJ.

MTF ADJ.

8MHz ADJ.

875kHz ADJ.

4,43MHz REMOVE CHROMA

LOW PASS 2MHz

DELAY 64µ sec

CCD 846 5BIT

DELAYED VIDEO AMPL ADJ.

CLOCK GENERATOR 13,5MHz

TANGENTIAL ERROR DETECTOR

SPECIAL BURST GATE

SPECIAL BURST SEPARATOR

SPECIAL BURST DETECTOR

SAMPLE DETECTOR

SUBPANEL 1002B

CLAMP
BURST GATE
TO 7001-4A
7001-4D
LOW PASS 2MHz
DELAY 64µ sec
CCD 848.5BIT
CLOCK DRIVER
SUBSTRATE BIAS GEN
DELAYED VIDEO AMPL. ADJ.
CLOCK GENERATOR 13.5MHz
BURST KEY
CV-DOC
TANGENTIAL ERROR DETECTOR
CLV-SCAN
SAMPLE DETECTOR
VIDEO CCD
LOW PASS 6.6MHz
CCD ADJ
CCD PASS THROUGH
VCO
AUDIO CCD
AUTO BIAS
CLOCK DRIVER
SHIFT REG 680BIT
VAR. DELAY LINE 7MHz
VIDEO ADJ
DELAY CONTROL
VIDEO TIME ERROR
HF-AUD
HF-ATBC
BURST-ER
TANG-ER
REFH
CVBS-TBM
CVBS-OUT
TO VIDEO II PANEL V14
TO µPROCESSOR PANEL U11
TO VIDEO II PANEL V15
TO MOTOR PANEL MO13
RAMPEN
REFH
H-MANCH
V-MANCH
CLV-SCAN
CL-VID
HFATBC
CSYNC1
PRS 03069
T33-836

1001	J 4	2401	E 9	3239	H31	5104	C26
2101	E 4	2402	E 9	3240	G31	5105	F25
2101	D15	2403	H11	3241	H31	5106	A 5
2102	E 3	2404	H11	3242	G31	5107	C 6
2103	F 4	2405	I 11	3243	J32	5108	B10
2104	F 3	2406	I 11	3244	J32	5109	B11
2105	F 4	2407	J10	3245	J30	5110	B11
2106	F 3	2408	J11	3246	I 30	5111	A17
2107	A 2	2409	J10	3247	J30	5112	A16
2108	B 2	2410	J10	3250	L28	5113	C15
2109	B 3	2411	K13	3251	L29	5114	B10
2110	B 3	2412	N10	3253	K32	5201	C29
2111	C 4	2413	J11	3254	K33	5202	F34
2112	D12	2414	N11	3255	L32	5203	F34
2113	E13	2415	M 9	3256	L31	5204	F35
2114	E12	2416	M16	3257	L32	5205	F35
2115	D13	2417	O16	3258	M32	5206	F36
2116	E16	2418	N17	3259	C 3	5207	F36
2117	C20	2419	L19	3260	E 5	5208	F37
2118	C21	2420	M21	3261	N 2	5401	M10
2119	C22	2421	M22	3262	L 2	6101	A22
2120	C22	2422	O21	3263	N 6	6102	A23
2121	A22	2423	L24	3264	M 6	6103	A23
2122	C23	2424	L27	3265	M 7	6104	E23
2123	D23	2425	M27	3266	K34	6105	E24
2124	D23	2427	G26	3267	J34	6201	B30
2125	D24	2428	J24	3268	J34	6202	C30
2126	D24	3429	K 2	3269	I 33	6203	G34
2127	F23	2430	K 3	3270	J34	6204	G35
2128	E23	2431	O14	3271	J35	6205	G35
2129	E24	2432	E 5	3272	K35	6206	G36
2130	E25	2433	N14	3273	H35	6207	G36
2131	F25	2438	M18	3274	I 35	6208	G37
2132	F26	2439	M11	3275	I 36	6209	H35
2133	E22	2440	N19	3276	I 36	6210	N17
2134	B24	2441	L22	3277	H36	6211	K12
2135	B25	2442	E 6	3278	G38	6212	F29
2136	C26	2485	M24	3279	G38	6213	M 6
2137	C26	2486	I 26	3280	G38	6214	F32
2138	C27	2487	H 9	3281	G39	6301	H22
2139	B 6	2488	O17	3282	G39	6302	I 22
2140	C18	2489	N19	3283	F38	6401	N20
2141	C17	2633	N 2	3284	G37	6402	L18
2142	C16	2634	N 3	3285	F38	6403	L19
2143	A15	2635	D 2	3286	F31	6404	M22
2144	B15	3101	E 3	3287	F31	6405	O18
2148	B10	3102	E 3	3288	F30	6406	N23
2149	A10	3103	F 3	3289	E30	6407	K22
2150	A11	3104	A 2	3290	F38	6408	J10
2151	A11	3105	B 3	3291	E29	6409	O19
2153	B 9	3106	B 3	3301	H 2	6410	D 2
2154	A13	3107	B 4	3302	I 2	7001	A 6
2154	B 9	3108	A 4	3303	I 2	7001	C19
2155	A 9	3109	B 4	3304	F 9	7001	A 8
2156	B 8	3110	A 4	3305	I 8	7001	A13
2157	B 6	3111	B 5	3306	K 6	7002	C24
2158	A 6	3112	C 5	3307	K 6	7003	K30
2159	A 5	3113	E11	3308	L 6	7004	I 31
2160	A 5	3114	D12	3310	J 8	7005	H 3
2161	A 5	3115	E12	3311	J 4	7005	G 7
2162	C 7	3116	E13	3312	E 7	7006	G29
2163	B 9	3117	E13	3313	E 7	7007	C31
2164	F 9	3118	E14	3315	J16	7008	H10
2165	F 9	3119	E15	3316	K16	7008	G14
2167	C22	3120	E14	3317	J16	7009	I 34
2168	J 4	3121	D15	3318	I 18	7009	I 36
2169	A15	3122	D14	3319	I 20	7010	H21
2170	C20	3123	D13	3320	I 16	7010	H22
2201	B28	3124	D13	3321	H16	7010	I 21
2202	C29	3125	A21	3322	H16	7010	I 23
2203	C29	3126	B23	3323	G18	7011	N13
2204	D30	3127	B23	3324	G20	7011	L25
2205	C31	3128	B20	3326	H23	7011	K26
2206	D31	3129	B21	3327	H22	7011	J23
2207	C32	3130	C21	3328	K25	7012	N18
2208	C32	3131	C21	3329	G23	7012	K19
2209	C32	3132	D25	3330	H24	7013	M23
2210	C33	3133	D25	3401	E 9	7013	M24
2211	C34	3134	D25	3402	G14	7014	O18
2212	D36	3135	D25	3403	H16	7014	O20
2213	D36	3136	E25	3404	K12	7014	O21
2214	C36	3137	E24	3405	K13	7014	O22
2215	F30	3138	E23	3406	K13	7015	L24
2216	F31	3139	F22	3407	K14	7015	H27
2217	F32	3140	F22	3408	I 14	7016	L27
2218	C 4	3141	F24	3409	I 9	7016	H24
2219	K33	3142	F25	3410	J 9	7017	K19
2220	G29	3143	E 9	3411	J10	7017	H19
2222	H32	3144	B 5	3412	J10	7018	K18
2223	J32	3145	B12	3413	N 9	7018	H17
2224	K30	3145	C 5	3414	N10	7101	A 4
2225	K29	3146	B11	3415	O10	7102	D12
2226	L29	3146	C 5	3416	O11	7103	D14
2227	L29	3147	B11	3417	O11	7104	D14
2228	L29	3147	A16	3418	N11	7105	B21
2229	M30	3148	A17	3419	M11	7106	B22
2230	M30	3149	A16	3421	M10	7107	B23
2231	L31	3150	A15	3422	N12	7108	C25
2232	L31	3151	A15	3423	M14	7109	C27
2233	K33	3152	B14	3425	L15	7110	F23
2234	M32	3153	B14	3426	M15	7111	E24
2235	G30	3154	A13	3427	N16	7113	C19
2236	H30	3155	A10	3428	N15	7201	B29
2237	I 31	3156	A 8	3429	O15	7202	B30
2238	I 35	3157	C 6	3430	O15	7203	D35
2239	I 35	3158	C 7	3431	O15	7204	C37
2240	I 33	3159	C 7	3432	M15	7205	B38
2241	C 3	3160	A 6	3433	M17	7206	F33
2242	G35	3162	B26	3434	N19	7207	F37
2243	F 5	3163	C25	3435	M19	7208	F38
2244	C 3	3164	C27	3437	L21	7209	F39
2245	F36	3165	C27	3438	M21	7210	H31
2246	F36	3166	C27	3439	N21	7211	E29
2247	G38	3167	A13	3440	L22	7213	G30
2248	J35	3170	D19	3441	M22	7214	L32
2249	G36	3201	A29	3442	L22	7215	L32
2250	F 6	3202	B29	3443	L23	7216	M 7
2252	L 3	3203	A29	3444	L23	7301	H 2
2253	N 7	3204	B29	3445	H25	7302	K 8
2254	N 8	3205	D30	3446	K24	7303	G23
2260	L 2	3206	D30	3447	O21	7304	J16
2261	H28	3207	A30	3448	M27	7305	H16
2266	F39	3208	C31	3449	L27	7401	N11
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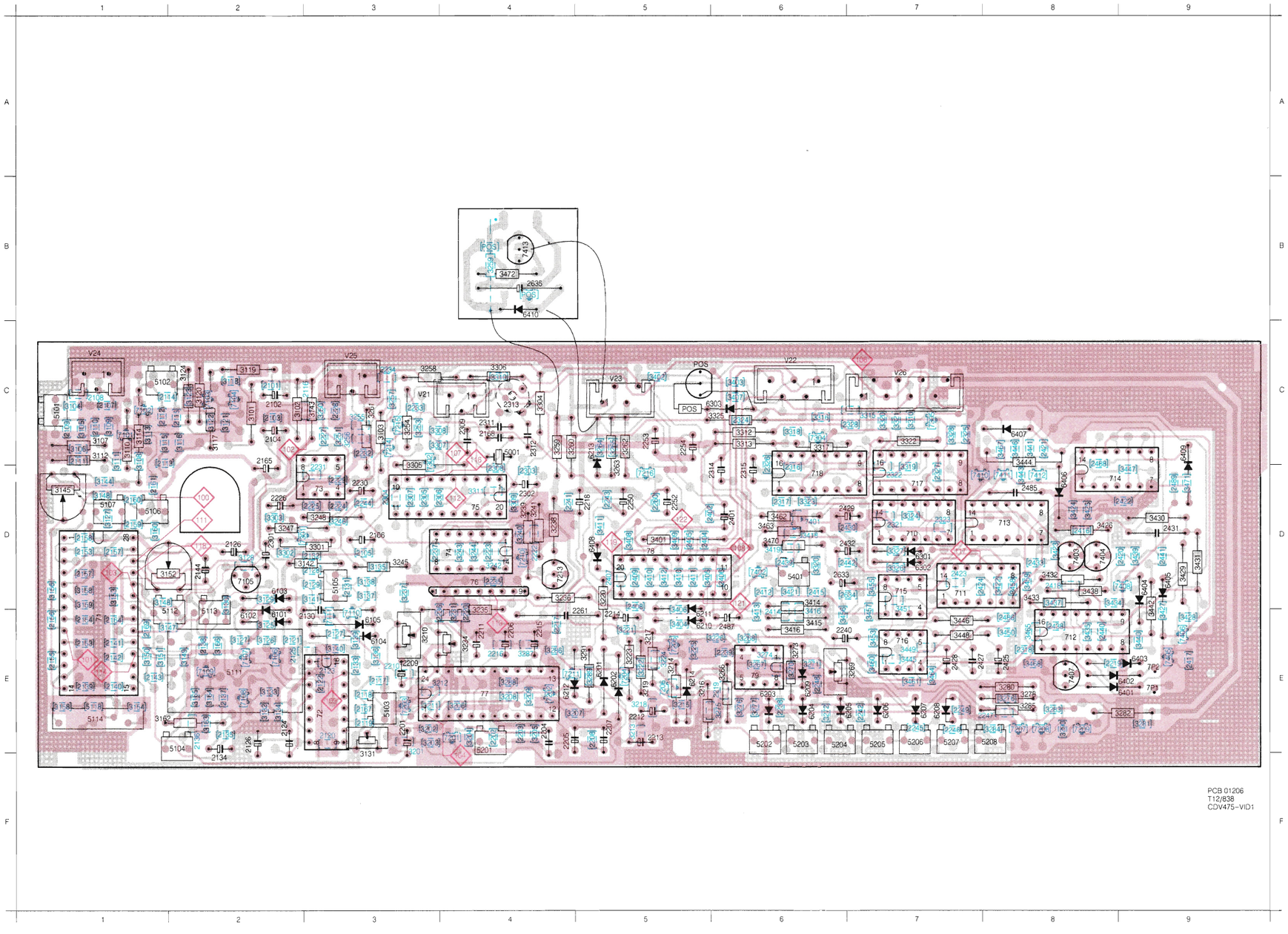

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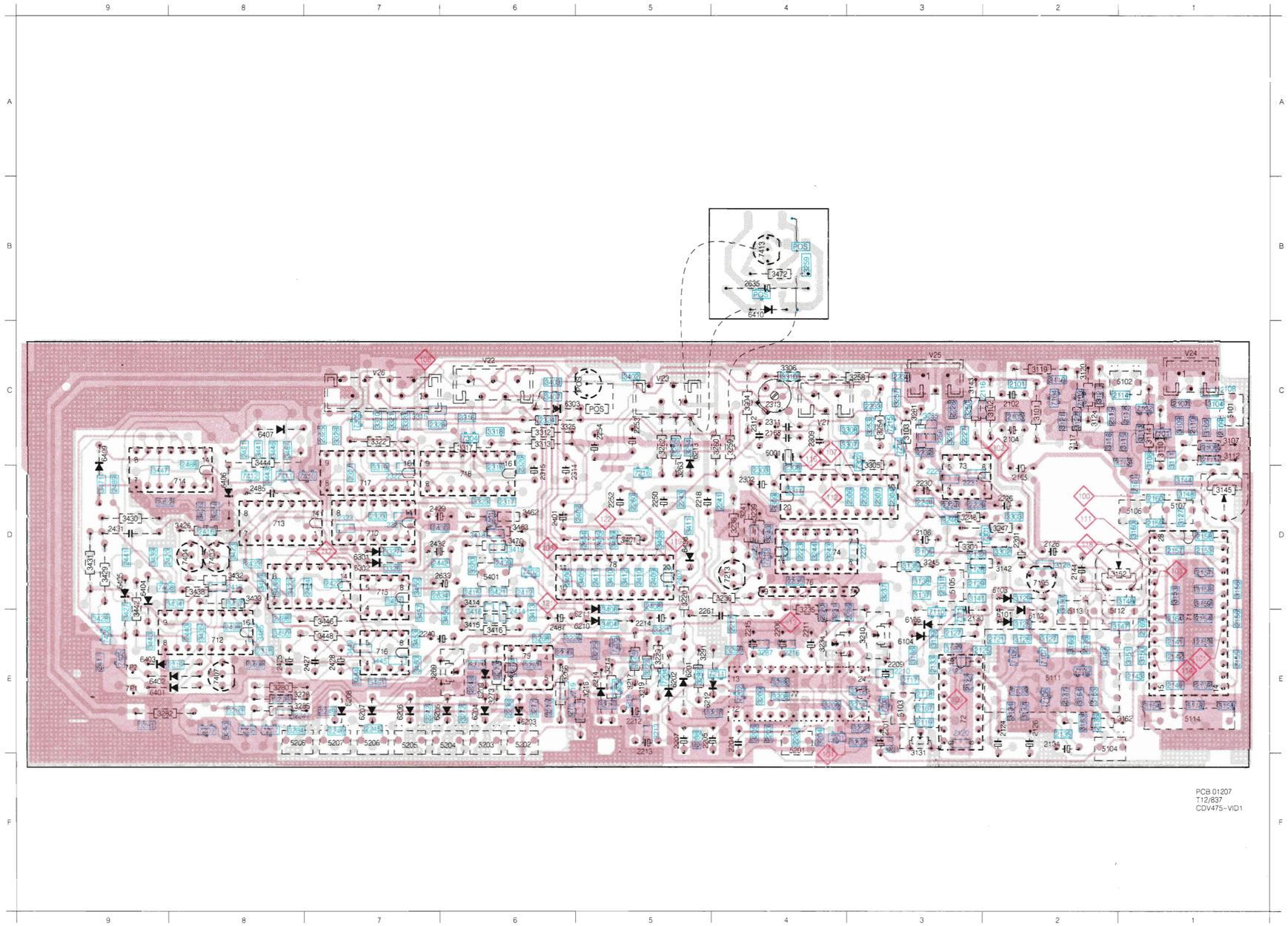

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MAPPING FOR CIRCUIT DIAGRAM VIDEO I-5

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2110	B 3	2328	J16	3238	G31	4320	M11		
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2113	D12	2403	H11	3241	H32	5103	C21		
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2129	E20	2419	L19	3260	E 5	5208	F37		
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2132	E19	2422	O21	3263	M 4	6101	A22		
2133	E22	2423	L24	3264	M 5	6102	A22		
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2135	C25	2425	M27	3266	J34	6104	E21		
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2139	B 6	2431	O14	3270	J34	6203	F34		
2140	C18	2432	D 5	3271	J35	6204	F35		
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2209	B32	3116	D12	3310	J 8	7005	G 7		
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2237	I 30	3143	E 8	3410	I 9	7017	K19		
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2255	M 7	3162	B26	3430	O14	7204	B37		
2256	M 7	3163	C25	3431	O14	7205	B38		
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2258	N 3	3165	C27	3433	M17	7207	F37		
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2268	N35	3202	B29	3440	L21	7213	G30		
2269	M36	3203	A29	3441	M22	7214	K31		
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2270	N34	3205	D30	3443	L22	7216	L 6		
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2272	L34	3207	A30	3446	K24	7302	K 8		
2273	L35	3208	B30	3447	O21	7303	G23		
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2276	E38	3210	B33	3449	L27	7305	H16		
2301	H 2	3211	C36	3450	G26	7401	M11		
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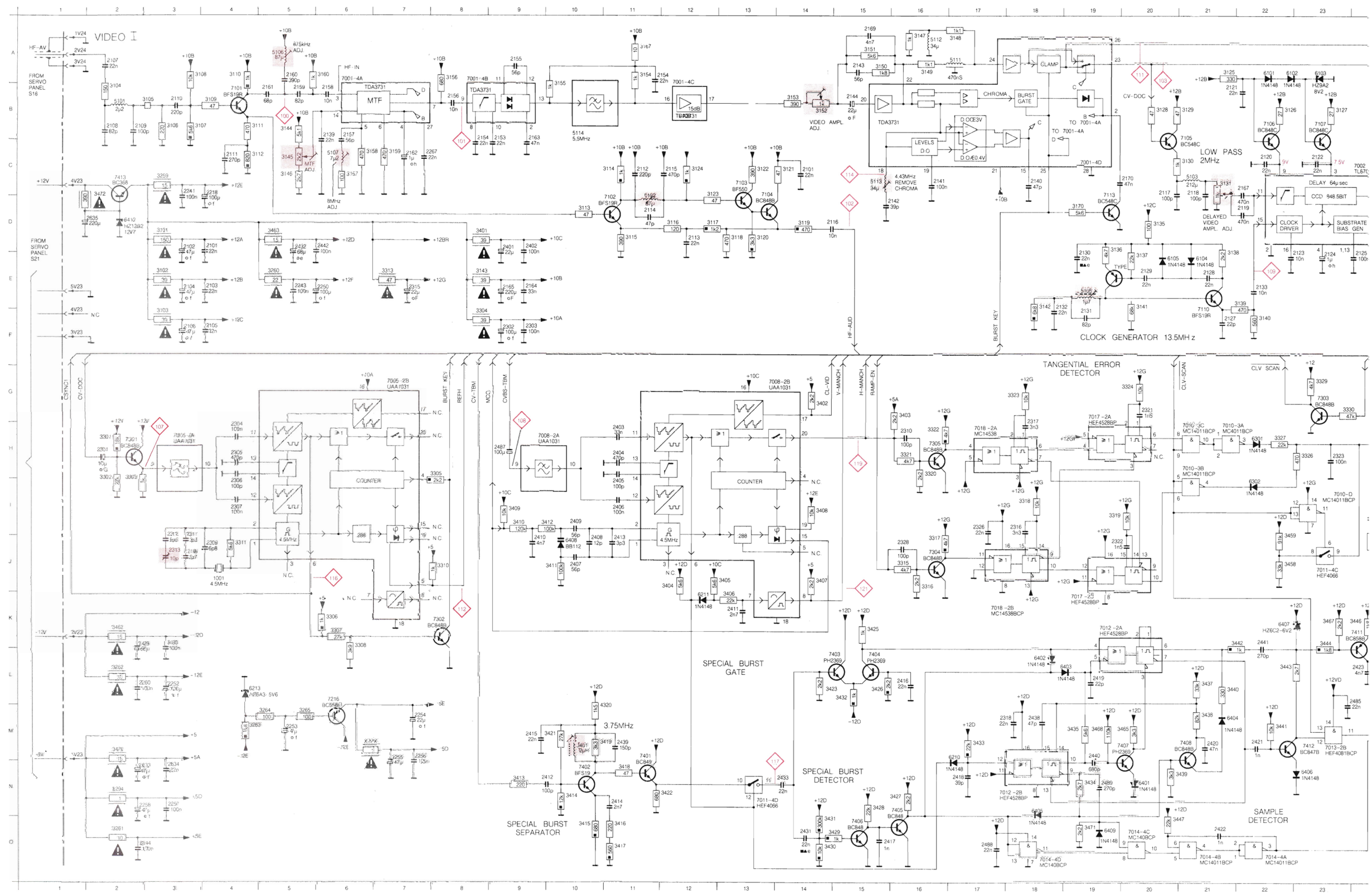
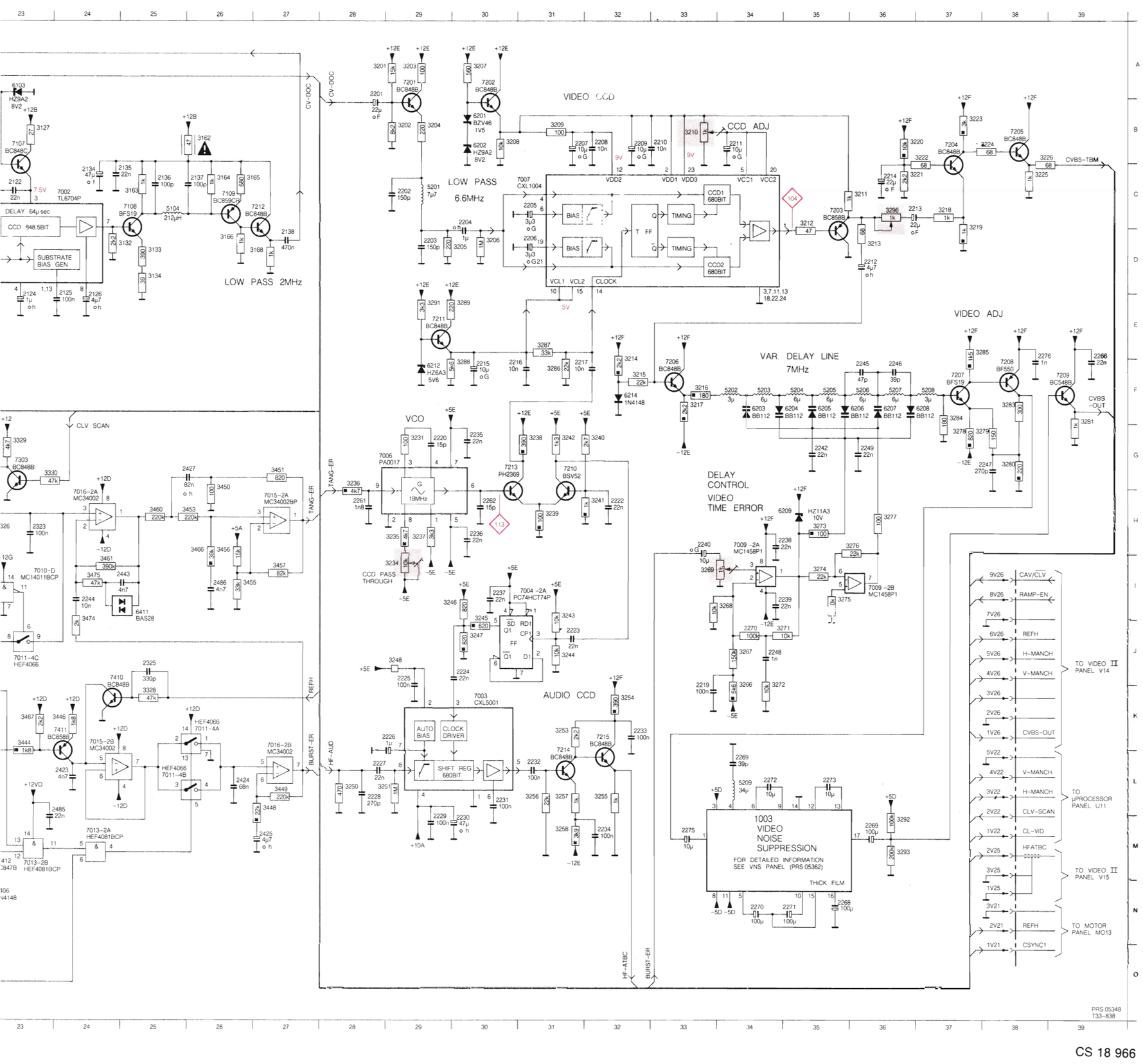
2305	H 4	3215	F32	3456	I 26	7405	N16		
2306	I 4	3216	F33	3457	I 27	7406	O15		
2307	I 4	3217	F33	3458	J22	7407	M20		
2309	J 4	3218	C37	3459	I 22	7408	M21		
2310	H16	3219	C37	3460	H25	7410	J24		

PRS 05355
T21-838


VIDEO I
FROM SERVO PANEL S18
FROM SERVO PANEL S21
HF-AV
HF-IN
875kHz ADJ.
MTF
MTF ADJ.
BMHz ADJ.
TDA3731
7001-4A
7001-4B
7001-4C
7001-4D
5114 5,5MHz
VIDEO AMPL ADJ.
CHROMA
BURST GATE
CLAMP
LEVELS D.O
4.43MHz REMOVE CHROMA
TO 7001-4A
CV-DOC
LOW PASS 2MHz
DELAY 64µ sec
CCD 948.5BIT
CLOCK DRIVER
SUBSTRATE BIAS GEN
DELAYED VIDEO AMPL. ADJ.
CLOCK GENERATOR 13.5MHz
TYPE
BURST KEY
HF-AUD
TANGENTIAL ERROR DETECTOR
CLV-SCAN
CLV SCAN
SPECIAL BURST GATE
SPECIAL BURST DETECTOR
SPECIAL BURST SEPARATOR
SAMPLE DETECTOR
3.75MHz
4.5MHz
COUNTER
CSYNC
CV-DOC
BURST KEY
REFH
CV-TBM
MCC
CVBS-TBM
H-MANCH
RAMP-EN
CL-VID
V-MANCH
N.C.



PRS.05348
T33-838

CS 18 966

PRINT LAY-OUT COMP.-SIDE VIDEO I-5

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2102	A 2	2125	C 2	2155	C 1	2210	C 3	2233	A 3
2103	A 2	2126	B 2	2156	C 1	2211	C 4	2234	A 3
2104	A 2	2126	D 2	2157	B 1	2212	D 5	2235	C 4
2105	B 3	2127	C 3	2157	B 1	2213	D 5	2236	C 4
2106	B 3	2128	B 2	2158	B 1	2214	C 5	2237	B 3
2107	A 1	2129	C 3	2159	B 1	2215	C 4	2238	D 6
2108	A 1	2130	C 3	2160	B 1	2216	C 4	2239	C 6
2109	A 1	2132	B 3	2161	B 1	2217	C 4	2240	C 7
2110	A 1	2133	C 3	2164	C 1	2218	B 5	2241	B 5
2111	B 1	2134	D 2	2165	B 2	2219	C 6	2243	B 5
2112	A 1	2135	D 2	2166	C 1	2219	C 9	2244	B 3
2113	B 2	2136	D 2	2167	D 3	2220	C 4	2245	D 7
2114	A 2	2137	C 2	2168	A 4	2222	B 4	2246	D 8
2115	A 2	2138	C 2	2169	C 1	2223	B 4	2247	D 8
2116	A 3	2139	C 1	2201	D 3	2224	B 3	2248	D 6
2117	C 3	2140	C 1	2202	D 4	2225	B 3	2249	D 8
2118	C 3	2141	C 1	2203	D 4	2226	B 2	2250	B 5
2119	D 3	2142	C 1	2204	D 4	2227	A 3	2252	B 5
2120	D 3	2143	C 1	2205	D 4	2228	A 3	2253	A 5
2121	C 2	2144	B 2	2206	C 4	2229	B 3	2255	A 8
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2257	A 8	2313	A 4	2414	C 6	2443	C 7	3115	A 2
2258	A 8	2314	B 6	2415	C 6	2444	C 7	3116	A 2
2260	B 5	2315	B 6	2416	B 8	2485	B 8	3117	A 2
2261	C 5	2316	B 6	2417	C 9	2486	C 8	3118	A 2
2266	A 9	2317	B 6	2418	C 8	2487	C 6	3119	A 2
2268	A10	2318	C 8	2420	B 9	2488	B 8	3120	A 2
2269	B10	2321	B 7	2421	A 8	2489	B 9	3121	A 2
2270	A10	2322	B 7	2422	B 9	2633	B 7	3122	A 2
2271	A10	2323	B 7	2424	C 8	2634	C 7	3123	A 2
2272	B10	2325	A 7	2425	C 8	3101	A 2	3124	A 2
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2301	B 2	2401	B 6	2430	B 7	3105	A 1	3127	C 2
2302	B 4	2402	B 6	2431	B 9	3106	A 1	3128	B 2
2303	B 4	2404	B 6	2432	B 7	3107	A 1	3129	C 2
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2305	B 3	2406	B 6	2438	C 8	3109	A 1	3132	C 2
2306	B 4	2407	B 5	2439	B 6	3110	A 1	3133	C 2
2307	B 3	2409	B 5	2440	C 8	3111	B 1	3134	D 2
2309	A 4	2410	B 5	2441	B 9	3112	A 1	3135	B 3
2311	A 4	2411	B 5	2442	B 7	3113	A 1	3136	C 3
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3138	C 3	3163	D 2	3220	C 5	3250	A 3	3274	C 6
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3140	C 3	3165	C 2	3222	C 5	3253	A 3	3276	D 6
3141	C 3	3166	C 2	3223	C 5	3254	A 3	3277	D 6
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3143	A 3	3201	D 3	3225	C 5	3256	A 3	3279	C 8
3144	B 1	3202	D 3	3226	C 6	3257	A 3	3280	C 8
3145	B 1	3203	D 4	3231	C 4	3258	A 3	3281	A 8
3147	C 2	3204	D 4	3234	C 4	3259	A 4	3282	A 8
3148	B 1	3205	D 4	3235	C 4	3260	A 5	3283	D 8
3148	C 2	3206	D 4	3236	C 4	3261	A 3	3284	D 8
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3150	C 1	3209	C 4	3238	B 4	3263	B 5	3286	C 4
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3159	C 1	3217	C 5	3246	B 3	3271	C 6	3294	A 8
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3304	A 4	3328	A 7	3422	C 8	3446	A 8	3473	C 7
3305	B 3	3329	A 6	3423	B 8	3447	B 9	3474	A 8
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3308	A 4	3402	A 6	3426	B 8	3450	C 8	5001	A 4
3309	B 4	3403	A 6	3427	C 9	3451	C 7	5101	A 1
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3315	A 7	3408	B 5	3432	B 8	3458	C 8	5106	B 1
3316	A 6	3409	B 5	3433	C 8	3459	C 8	5107	B 1
3317	A 6	3410	B 5	3434	C 9	3460	C 7	5111	C 2
3318	A 6	3411	B 5	3435	C 8	3461	C 7	5112	C 2
3319	B 7	3412	B 5	3437	C 8	3462	B 6	5113	C 2
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6104	C 3	6405	B 9	715	C 7	7302	B 3	V21	A 3
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6204	D 6	71	C 1	7201	D 4	7401	B 6	V26	A 7
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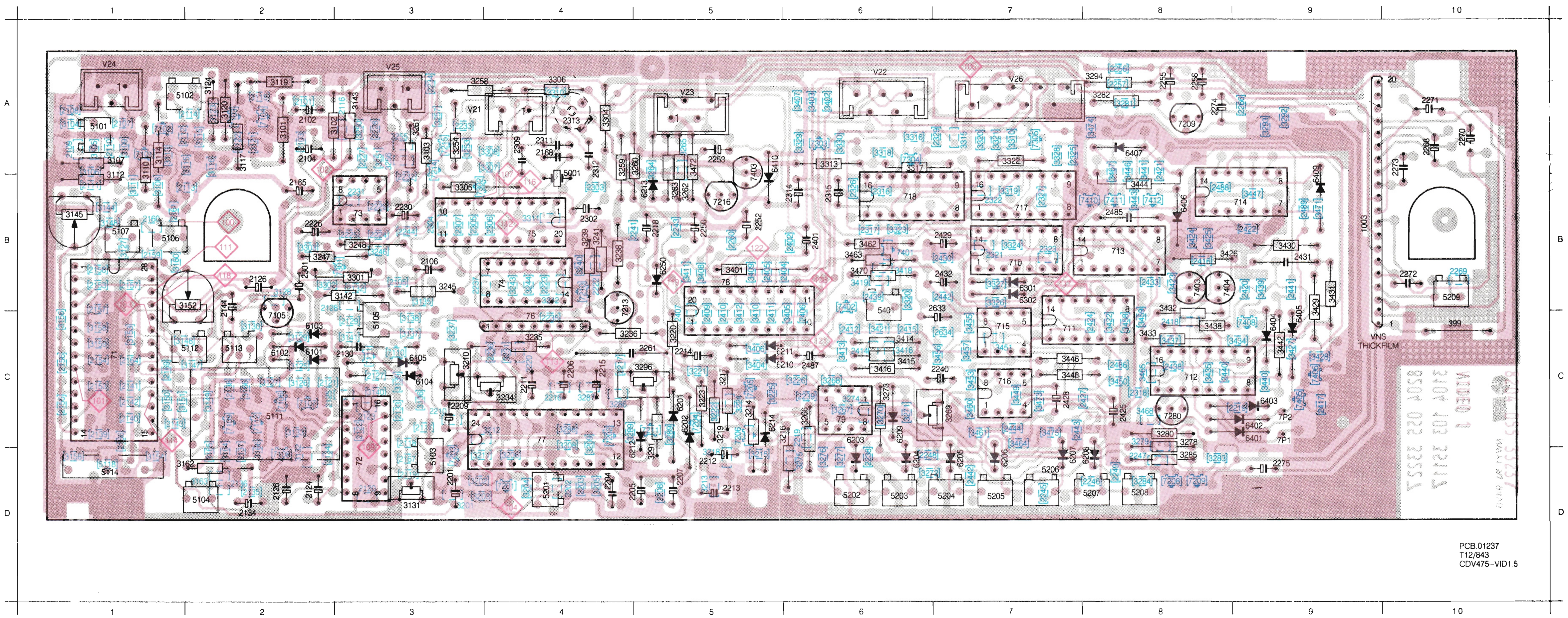


MEASUREMENTS & ADJUSTMENTS VIDEO & MTF

STEP	SIGNAL	MODE	◇				REMARKS
1	HF IN	STOP	100	5106		MIN. AMPLITUDE	DISCONNECTED V24 INJECT 875 kHz ≈80m Vpp IN 2V24
2	MTF 8MHz ADJ.	STOP	101	5107		MAX. AMPLITUDE	DISCONNECTED V24 INJECT 8 kHz ≈40m Vpp IN 2V24
3	AUDIO 2.8MHz SUPPRESSION	STOP	102	5102		MIN. AMPLITUDE	DISCONNECTED V24 INJECT 2.8 kHz ≈40mVpp
4	MTF GAIN	VIDEO TEST DISC PICT.NR. 515 STILL PICTURE	103	3145		SEE DRAWING MDA.01556	ADJUST FOR MULTI BURST ‡ MULTI BURST VI

MEASUREMENTS & ADJUSTMENTS DROP-OUT CIRCUIT

STEP	SIGNAL	MODE	◇				REMARKS
1	FREQUENCY	STOP	109	5105	FREQUENCY COUNTER 13.3MHz		COARSE
2	DELAY-TIME	VIDEO TEST DISC. PICT.NBR 10800	A=103 B=111	5105		A CHANNEL B CHANNEL	FINE ADJUST DELAY TIME BETWEEN EA AND B FOR 64µ s
3	AMPLITUDE DELAYED VIDEO	VIDEO TEST DISC. PICT.NR. 10800	A=103 B=111	3131		A CHANNEL B CHANNEL	ADJUSTMENT THE AMPLITUDE TO BE EQUAL FOR A AND B

MEASUREMENTS & ADJUSTMENTS VIDEO

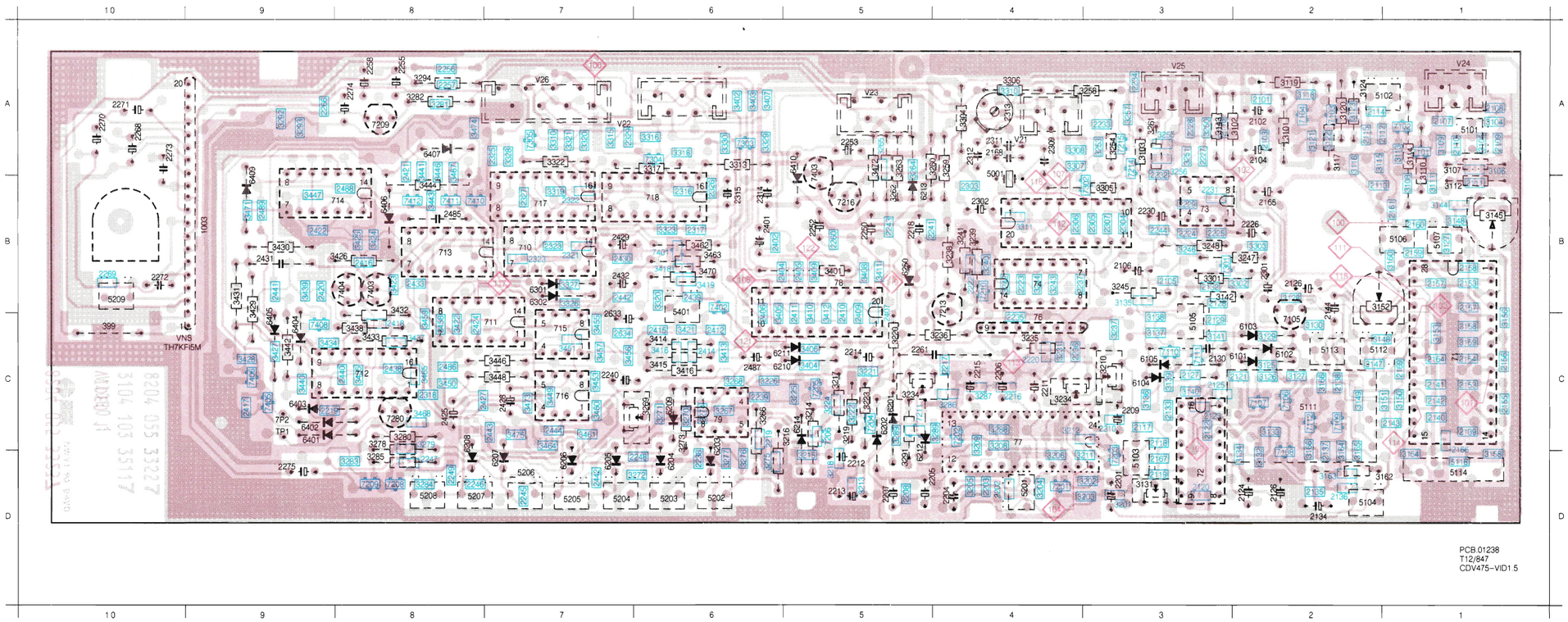
STEP	SIGNAL	MODE	◇				REMARKS
1	DC-LEVEL	VIDEO TEST DISC COLOURBAR STILL PICTURE	104	3210		2.2V	2.2V
2	VIDEO AMPLITUDE	VIDEO TEST DISC COLOURBAR STILL PICTURE	103	3152		2Vpp	
3	VIDEO AMPLITUDE	VIDEO TEST DISC COLOURBAR STILL PICTURE	106	3296		2Vpp	
4	DROP OUT	VIDEO TEST DISC COLOURBAR STILL PICTURE	103	3131			
5	VIDEO AMPLITUDE	VIDEO TEST DISC COLOURBAR STILL PICTURE	107			U=1.85Vpp-2Vpp	U
6	VIDEO AMPLITUDE	VIDEO TEST DISC COLOURBAR STILL PICTURE	108			U=2.7Vpp-3Vpp	

MEASURUMENTS & ADJUSTMENTS TIME-BASE CONTROL

STEP	SIGNAL	MODE	◇				REMARKS
1	FREQUENCY	STOP	112	2313	FREQUENCY COUNTER		AFTER 2 MINUTES WARMING UP 15.625,024- 15.624,975Hz
2	VCO	STOP 9-7006 GROUNDED TO EARTH	103 104	3234		A- CHANNEL B- CHANNEL	DELAY TIME BETWEEM A AND B ±70µ s
3	SPECIAL BURST SUPPRESSION	VIDEO TEST DISC PICR.NBR. 750	114 116	5113		TRIGGER SIGNAL 116	MIN. AMPLITUDE OF THE SPECIAL BURST
4	SPECIAL BURST AMPLITUDE	VIDEO TEST DISC. PLAY	117	5401			MAX. AMPLITUDE OP SPECIAL BURST
5	BURST ERROR	VIDEO TEST DISC PICR.NBR. 170 STILL PICTURE		2369			MIN. STRIPES IN RED PICTURE ON TV SREEN
	BURSTKEY	PLAY	118			8.5V ±1V	
	C. SYNC	PLAY	116			5V±1V	
	H. MANCH.	PLAY	119			5V+250mV -500 mV	15625Hz ±1kHz
	V. MANCH.	PLAY	121			5V+250mV -500 mV	50Hz ±5Hz
	MCO	PLAY	122			10V±1.5V	DUTY CYCLE 32µ s ± 8µs

PRINT LAY-OUT CHIP-SIDE VIDEO I-5

1003	B10	2123	C 3	2153	C 1	2208	D 5	2231	B 3	2257	A 8	2313	A 4	2414	C 6	2443	C 7	3115	A 2	3138	C 3	3163	D 2	3220	C 5	3250	A 3	3274	C 6	3302	B 2	3326	B 7	3419	B 6	3444	B 8	3471	B 9	5205	D 7	6213	B 5	7108	D 2	7210	B 4	7411	B 8
2101	A 2	2124	D 2	2154	C 1	2209	C 3	2232	A 3	2258	A 8	2314	B 6	2415	C 6	2444	C 7	3116	A 2	3139	C 3	3164	C 2	3221	C 5	3251	A 3	3275	D 6	3303	B 2	3327	B 7	3421	C 6	3446	C 7	3472	A 5	5206	D 7	6214	C 5	7109	C 2	7211	C 5	7412	B 8
2102	A 2	2125	C 2	2155	C 1	2210	C 3	2233	A 3	2260	B 5	2315	B 6	2416	B 8	2485	B 8	3117	A 2	3140	C 3	3165	C 2	3222	C 5	3253	A_3	3276	D 6	3304	A 4	3328	A 7	3422	C 8	3446	A 8	3473	C 7	5207	D 8	6250	B 5	711	C 7	7213	B 4	75	B 4
2103	A 2	2126	B 2	2156	C 1	2211	C 4	2234	A 3	2261	C 5	2316	B 6	2417	C 9	2486	C 8	3118	A 2	3141	C 3	3166	C 2	3223	C 5	3254	A 3	3277	D 6	3305	B 3	3329	A 6	3423	B 8	3447	B 9	3474	A 8	5208	D 8	6301	B 7	7110	C 3	7214	A 3	76	C 4
2104	A 2	2126	D 2	2157	B 1	2212	D 5	2235	C 4	2266	A 9	2317	B 6	2418	C 8	2487	C 6	3119	A 2	3142	B 3	3166	C 2	3224	C 5	3255	A 3	3278	C 8	3306	A 4	3330	A 6	3424	B 8	3448	C 7	3475	C 7	5209	B10	6302	B 7	7111	C 3	7215	A 3	77	C 4
2105	B 3	2127	C 3	2157	B 1	2213	D 5	2236	C 4	2268	A10	2318	C 8	2420	B 9	2488	B 8	3120	A 2	3143	A 3	3201	D 3	3225	C 5	3256	A 3	3279	C 8	3307	A 4	3401	B 5	3425	B 8	3449	C 7	399	C10	5401	B 6	6401	C 9	7112	C 2	7216	B 5	78	B 5
2106	B 3	2128	B 2	2158	B 1	2214	C 5	2237	B 3	2269	B10	2321	B 7	2421	A 8	2489	B 9	3121	A 2	3144	B 1	3202	D 3	3226	C 6	3257	A 3	3280	C 8	3308	A 4	3402	A 6	3426	B 8	3450	C 8	5001	A 4	6101	C 2	6402	C 9	712	C 8	7280	C 8	79	C 6
2107	A 1	2129	C 3	2159	B 1	2215	C 4	2238	D 6	2270	A10	2322	B 7	2422	B 9	2633	B 7	3122	A 2	3145	B 1	3203	D 4	3231	C 4	3258	A 3	3281	A 8	3309	B 4	3403	A 6	3427	C 9	3451	C 7	5101	A 1	6102	C 2	6403	C 9	713	B 8	73	B 3	7P1	C 9
2108	A 1	2130	C 3	2160	B 1	2216	C 4	2239	C 6	2271	A10	2323	B 7	2424	C 8	2634	C 7	3123	A 2	3147	C 2	3204	D 4	3234	C 4	3259	A 4	3282	A 8	3310	A 4	3404	C 5	3428	C 9	3453	C 7	5102	A 2	6103	C 2	6404	C 9	714	B 9	7301	B 3	7P2	C 9
2109	A 1	2132	B 3	2161	B 1	2217	C 4	2240	C 7	2272	B10	2325	A 7	2425	C 8	3101	A 2	3124	A 2	3148	B 1	3205	D 4	3235	C 4	3260	A 5	3283	D 8	3310	A 7	3405	B 6	3429	B 9	3455	C 7	5103	D 3	6104	C 3	6405	B 9	715	C 7	7302	B 3	V21	A 3
2110	A 1	2133	C 3	2164	C 1	2218	B 5	2241	B 5	2273	A10	2326	B 6	2427	C 8	3102	A 2	3125	C 2	3206	D 4	3236	C 4	3237	C 4	3261	A 3	3284	D 8	3311	B 4	3406	C 5	3430	B 9	3456	C 7	5104	D 2	6105	C 3	6406	B 8	716	C 7	7303	A 6	V22	A 6
2111	B 1	2134	D 2	2165	B 2	2219	C 6	2243	B 5	2274	A 8	2327	B 7	2428	C 7	3103	A 3	3126	C 2	3149	C 2	3208	C 4	3237	C 3	3262	B 5	3285	D 8	3313	A 6	3407	A 6	3431	B 9	3457	C 7	5105	C 3	6201	C 5	6407	A 8	717	B 7	7304	A 6	V23	A 5
2112	A 1	2135	D 2	2166	C 1	2219	C 9	2244	B 3	2275	D 9	2329	A 7	2429	B 7	3104	A 1	3127	B 1	3150	C 1	3209	C 4	3238	B 4	3263	B 5	3286	C 4	3315	A 7	3408	B 5	3432	B 8	3458	C 8	5106	B 1	6202	C 5	6409	A 9	718	B 6	7305	A 7	V24	A 1
2113	B 2	2136	D 2	2167	D 3	2220	C 4	2245	D 7	2301	B 2	2401	B 6	2430	B 7	3105	A 1	3127	C 2	3151	C 1	3210	C 3	3239	B 4	3264	A 5	3287	C 4	3316	A 6	3409	B 5	3433	C 6	3459	C 8	5107	B 1	6203	C 6	6410	A 5	72	D 3	74	B 4	V25	A 3
2114	A 2	2137	C 2	2168	A 4	2222	B 4	2246	D 8	2302	B 4	2402	B 6	2431	B 9	3106	A 1	3128	B 2	3152	B 2	3211	D 4	3240	B 4	3265	A 5	3288	C 4	3317	A 6	3410	B 5	3434	C 9	3460	C 7	5111	C 2	6204	D 6	71	C 1	7201	D 4	7401	B 6	V26	A 7
2115	A 2	2138	C 2	2169	C 1	2223	B 4	2247	D 8	2303	B 4	2404	B 6	2432	B 7	3107	A 1	3129	C 2	3153	C 1	3212	C 4	3241	B 4	3266	C 6	3289	C 5	3318	A 6	3411	B 5	3435	C 8	3461	C 7	5112	C 2	6205	D 7	710	B 7	7202	C 4	7402	B 8		
2116	A 3	2139	C 1	2201	D 3	2224	B 3	2248	D 6	2304	B 3	2405	B 5	2433	B 8	3108	B 1	3131	D 3	3154	D 1	3213	D 5	3242	B 4	3267	C 6	3289	C 4	3319	B 7	3412	B 5	3437	C 8	3462	B 6	5113	C 2	6206	D 7	7101	A 1	7203	D 3	7403	B 8		
2117	C 3	2140	C 1	2202	D 4	2225	B 3	2249	D 8	2305	B 3	2406	B 6	2438	C 8	3109	A 1	3132	C 2	3156	C 1	3214	C 5	3243	B 4	3268	C 6	3291	C 5	3320	A 7	3413	C 6	3438	C 8	3463	B 6	5114	D 1	6207	D 7	7102	A 1	7204	C 5	7403	A 5		
2118	C 3	2141	C 1	2203	D 4	2226	B 2	2250	B 5	2306	B 4	2407	B 5	2439	B 6	3110	A 1	3133	C 2	3158	D 1	3215	D 5	3244	B 4	3269	C 7	3292	A 9	3320	B 6	3414	C 6	3439	B 9	3464	C 7	5118	D 1	6208	D 8	7103	A 2	7205	C 5	7404	B 8		
2119	D 3	2142	C 1	2204	D 4	2227	A 3	2252	B 5	2307	B 3	2409	B 5	2440	C 8	3111	B 1	3134	D 2	3158	D 1	3216	C 5	3245	B 3	3270	C 6	3293	A 9	3321	A 7	3415	C 6	3440	C 9	3465	C 8	5201	D 4	6209	C 6	7104	A 2	7206	C 5	7405	C 9		
2120	D 3	2143	C 1	2205	D 4	2228	A 3	2253	A 5	2309	A 4	2410	B 5	2441	B 9	3112	A 1	3135	B 3	3159	C 1	3217	C 5	3246	B 3	3271	C 6	3294	A 8	3322	A 7	3416	C 6	3441	A 8	3467	A 8	5202	D 6	6210	C 6	7105	C 2	7208	D 8	7406	C 9		
2121	C 2	2144	B 2	2206	C 4	2229	B 3	2255	A 8	2311	A 4	2411	B 5	2442	B 7	3113	A 1	3136	C 3	3160	D 2	3158	D 1	3217	C 5	3247	B 2	3272	D 7	3296	B 6	3416	C 6	3442	C 9	3468	C 8	5203	D 6	6211	C 6	7106	C 2	7209	D 8	7408	C 9		
2122	C 3	2153	B 1	2207	D 5	2230	B 3	2256	A 8	2312	A 4	2412	C 6	2442	D 7	3114	A 1	3137	C 3	3162	D 2	3219	C 5	3248	B 3	3273	C 6	3301	B 3	3324	B 7	3418	B 6	3443	B 8	3470	B 6	5204	D 7	6212	C 4	7107	C 2	7209	A 8	7410	B 8		



PARTSLIST VIDEO I-5

Various

1001	4822 242 70361	X-TAL 4.5 MHZ
1003	4822 214 51769	V.N.S THICK FILM
	4822 124 41558	ELCAP 10µ BIP 25V
	4822 122 33325	CHIP 470N 16V
	4822 122 10166	TUBULAR 22N 16V
	4822 122 33142	POLYESTER 6P8
	4822 122 33141	POLYESTER 3P3
	4822 122 32148	POLYESTER 5P6
	4822 125 50062	TRIMMING CAPACITOR 10PF
	5322 122 32933	1NF 5%NP0 50V
	4822 122 32891	POLYESTER 68 N 50V

	4822 116 52415	RESISTOR 3K
	4822 111 30517	SAFETY RESISTOR 22E
	4822 111 30508	SAFETY RESISTOR 10E
	4822 111 30526	SAFETY RESISTOR 47E
	4822 111 30513	SAFETY RESISTOR 15E
	4822 111 30524	SAFETY RESISTOR 39E
3131	4822 100 11214	TRIMMING POTENTIOMETER 1K
3145	5322 101 14008	TRIMMING POTENTIOMETER 2K2
3152	4822 100 10254	TRIMMING POTENTIOMETER 1K
3210	4822 100 11214	TRIMMING POTENTIOMETER 1K
3234	4822 101 10859	TRIMMING POTENTIOMETER 10K
3269	4822 100 11214	TRIMMING POTENTIOMETER 1K

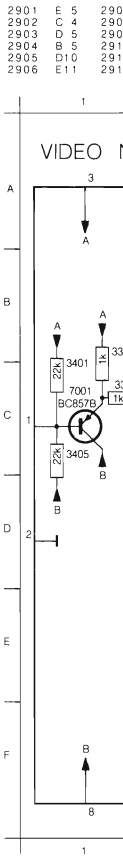
5101	4822 157 53266	COIL 3µH
5102	4822 156 10994	COIL 87µH
5103	4822 156 11007	COIL 212µH
5104	4822 156 11007	COIL 212µH
5105	4822 156 10997	COIL 1.7µH
5106	4822 156 21054	COIL 87UH
5107	4822 156 21147	COIL 7.2µH
5112	4822 156 21026	COIL 34 µH
5113	4822 156 21026	COIL 34 µH
5201	4822 156 11002	COIL 7.7µH
5202	4822 156 10998	COIL 3 µH
5203	4822 156 11001	COIL 6 µH
5204	4822 156 11001	COIL 6 µH
5205	4822 156 11001	COIL 6 µH
5206	4822 156 11001	COIL 6 µH
5207	4822 156 11001	COIL 6 µH
5208	4822 156 10998	COIL 3 µH
5401	4822 156 11003	COIL 12µH
5111	4822 320 40081	470 NSEC
5114	4822 157 53267	LOW-PASSFILTER 5.5MHZ

	4822 130 30621	1N4148
	4822 130 32227	BB112
6103	4822 130 33294	HZ9A2 8V2
6201	5322 130 34865	BZV46 1V5
6202	4822 130 33294	HZ9A2 8V2
6209	4822 130 32566	HZ11A3 10V0
6212	4822 130 32697	HZ6A3 5V6
6213	4822 130 32697	HZ6A3 5V6
6407	4822 130 32698	HZ6C2 6V2
6410	5322 130 32026	HZ12B2

7001	4822 209 72757	IC TDA3731/N1
7002	4822 209 11412	TL8704P
7003	4822 209 71275	CXL5001
7004	5322 209 82575	PC74HC74P
7005	4822 209 71316	UAA1031
7006	4822 209 71825	PA0017
7007	4822 209 71276	CXL1004
7008	4822 209 71316	UAA1031
7009	4822 209 81349	MC1458P1 (MTLA)
7010	4822 209 10247	MC14011BCP
7011	5322 209 10357	HEF4066BP
7012	4822 209 10866	HEF4428BP
7013	4822 209 10053	MC14081BCP
7014	4822 209 10247	MC14011BCP
7015	4822 209 71382	MC34002BP
7016	4822 209 71382	MC34002BP
7017	4822 209 10866	HEF4428BP
7018	4822 209 81091	MC14538BCP

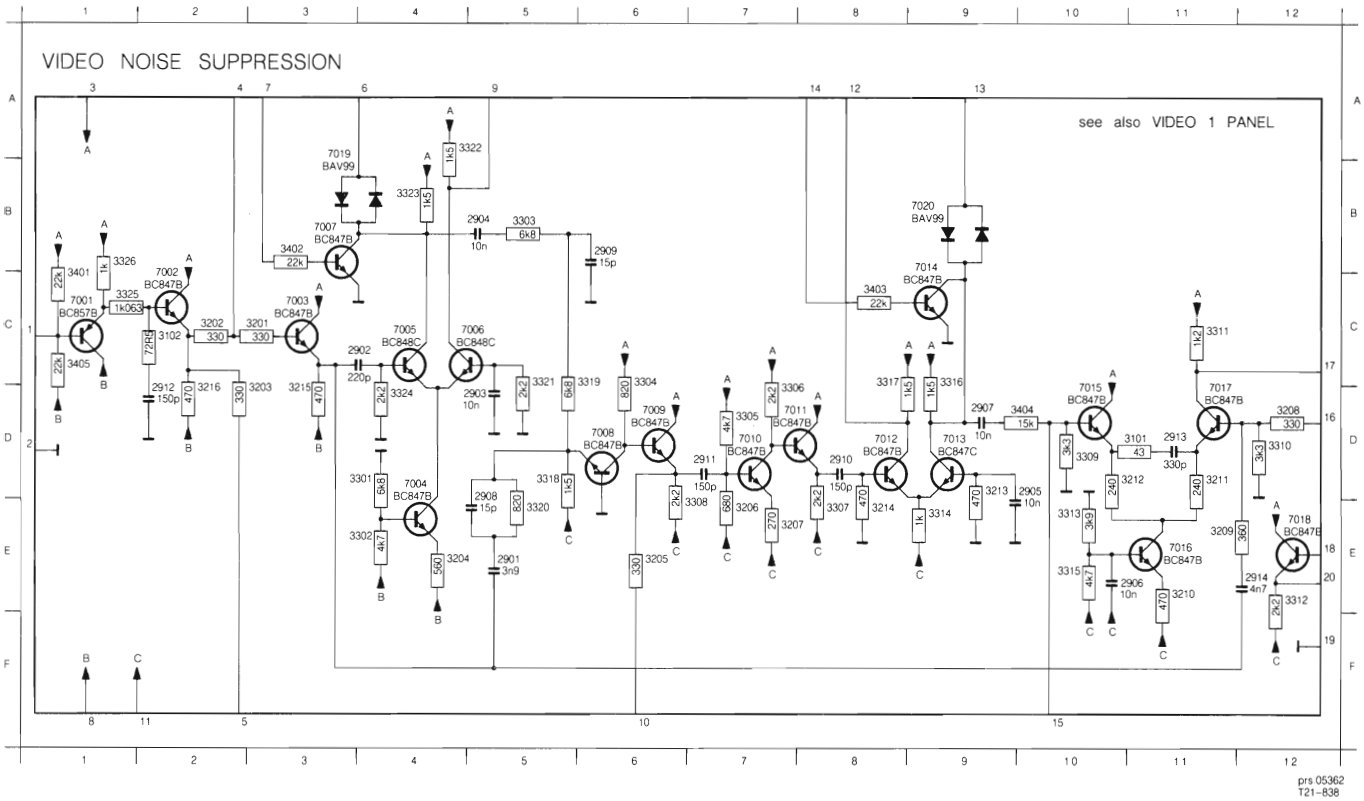
4822 130 42353	BFS19
4822 130 42131	BF550
5322 130 41982	BC848B
4822 130 44196	BC548C
4822 130 60516	BC859C
4822 130 42513	BC858C
5322 130 44336	BSV52
5322 130 41983	BC858B
4822 130 40938	BC548
4822 130 42711	BC849B
4822 130 41594	PH2369
4822 130 60511	BC847B
5322 130 44647	BC368

VIDEO N



VIDEO NOISE SUPPRESSION THICK FILM

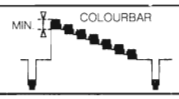
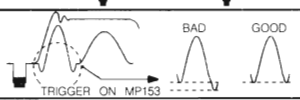
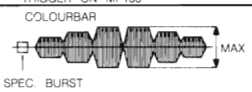
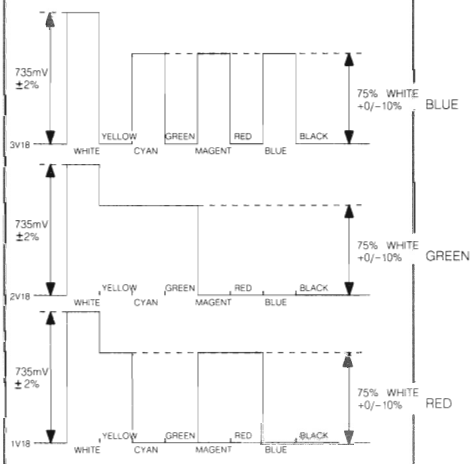
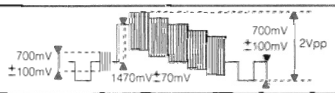
2901	E 5	2907	D 9	2913	D11	3203	D 3	3209	E11	3215	D 3	3305	D 7	3311	C11	3317	C 8	3323	B 4	3403	C 8	7004	D 4	7010	D 7	7016	E11
2902	C 4	2908	D 5	2914	E12	3204	E 4	3210	E11	3216	D 2	3306	D 8	3312	E12	3318	D 5	3324	D 4	3404	D10	7005	C 4	7011	D 8	7017	D11
2903	D 5	2909	B 6	3101	D11	3205	E 6	3211	D11	3301	D 4	3307	E 8	3313	E10	3319	C 6	3325	C 1	3405	C 1	7006	C 5	7012	D 8	7018	E12
2904	B 5	2910	D 8	3102	C 2	3206	E 7	3212	D11	3302	E 4	3308	E 7	3314	E 9	3320	E 5	3326	B 1	7001	C 1	7007	B 3	7013	D 9	7019	A 3
2905	D10	2911	D 7	3201	C 3	3207	E 8	3213	D 9	3303	B 5	3309	D10	3315	E10	3321	C 5	3401	C 1	7002	C 2	7008	D 6	7014	B 9	7020	B 9
2906	E11	2912	D 2	3202	C 2	3208	D12	3214	E 8	3304	C 6	3310	D12	3316	C 9	3322	A 5	3402	B 3	7003	C 3	7009	D 6	7015	D10		



MEASUREMENTS AND ADJUSTMENTS SYNC. GENERATOR

STEP	SIGNAL	MODE	◇				REMARKS
1	FREQUENCY	STOP	150	5101	FREQ. COUNTER		5MHz ±10kHz COARSE
2	DC-LEVEL	STOP	151	5101		3.5V ±50mV	FINE

MEASUREMENTS AND ADJUSTMENTS LUM/CHROM./R.G.B.

STEP	SIGNAL	MODE	◇				REMARKS
1	LUMINANCE	VIDEO TEST DISC COLOURBAR STILL PICTURE	152	5203			ADJUST FOR A MINIMUM COLOUR SIGNAL
2	LUMINANCE	VIDEO TEST DISC PICT. NO 10427	152 153	5204			
3	CHROMINANCE	VIDEO TEST DISC COLOURBAR STILL PICTURE	154	5202			ADJUST FOR MAXIMUM CHROMINANCE
4	R.G.B.	VIDEO TEST DISC WHITE PICTURE STILL PICTURE	156	3265			
5	VENETIAN BLINDS	VIDEO TEST DISC COLOURBAR STILL PICTURE	TV SCREEN	3237			ADJUST FOR MINIMUM "BLINDS" IN THE MAGENTA COLOUR
6	R.G.B.	VIDEO TEST DISC COLOURBAR STILL PICTURE	156	5205 OR 5206			ADJUST FOR MINIMAL JITTER
7	SUB CARRIER	VIDEO TEST DISC COLOURBAR	157	2221	FREQ. COUNTER 8.86MHz		
8	R.G.B.	VIDEO TEST DISC COLOURBAR	156 158 159				
9	C.V.B.S.	VIDEO TEST DISC COLOURBAR	161				
10	SUB CARRIER CVBS MOD.	VIDEO TEST DISC COLOURBAR	162	2250	FREQ. COUNTER 4.433619MHz ±30Hz		
11	AUDIO L+R	VIDEO TEST DISC PICT.NO 4615-5399 A-B REP.	163 164	3006 3026	R.M.S. CINCH 625mV SCART 310mV		PM6309 DISTORTION METER
12	AUDIO DISTORTION	VIDEO TEST DISC PICT.NO 4615-5399 A-B REP.	163 164	5001 5002	≷0.6%		PM6309 DISTORTION METER

PARTSLIST VIDEO I-4

	4822 122 10177	10NF 20% 25V
	4822 121 51053	2NF 1% 250V
	4822 122 10166	TUBULAR 22N 16V
	4822 122 33156	100NF 63V
2221	4822 125 50045	TRIMMING CAPACITOR 1.8-22PF 250V
2250	4822 125 50207	TRIMMING CAPACITOR 2-33PF 250V

3006	4822 100 11215	TRIMMING POTENTIOMETER 20K
3026	4822 100 11215	TRIMMING POTENTIOMETER 20K
3237	4822 100 11214	TRIMMING POTENTIOMETER 1K
	4822 111 30508	10E 5% 0.33W
	4822 111 30508	10E 5% 0.33W
	4822 111 30499	4E7 5% 0.33W
	4822 116 53027	5K6 1% 0.6W
	4822 111 30483	SAFETY RESISTOR 1E PM5

5001	4822 156 11004	COIL 26.5 µH
5001	4822 157 53135	C3TV-FN 205.0 µH
5002	4822 157 53136	C3TV-FN 136.0 µH
5002	4822 156 11004	COIL 26.5 µH
5003	4822 157 53516	COIL 8.2 µH
5003	4822 156 11004	COIL 26.5 µH
5004	4822 157 53516	COIL 8.2 µH
5005	4822 157 53137	COIL 81.0 µH
5006	4822 156 11004	COIL 26.5 µH
5007	4822 156 11004	COIL 26.5 µH
5011	4822 242 71658	BAND PASS FILTER 684 KHZ
5012	4822 242 71659	BAND PASS FILTER 1066 KHZ
5101	4822 157 53257	COIL 37.0 µH
5201	4822 157 51247	COIL 150 µH
5202	4822 157 52874	COIL 12.5 µH L2
5203	4822 157 52873	COIL 5.5 µH L1
5204	4822 157 52875	COIL 66 µH L3
5205	4822 157 53131	COIL 10.9 µH
5206	4822 157 53258	COIL 11.0 µH
5207	4822 157 53259	COIL 166 NNF 10264
5208	4822 157 53217	COIL 7.04 µH
5209	4822 158 10604	COIL 6.8 µH
5210	4822 157 50963	COIL 2.2 µH
5301	4822 320 40051	DELAY LINE 771
5302	4822 320 40131	DELAY LINE 390
5303	4822 320 40131	DELAY LINE 270
5401	4822 242 70626	8.867238 MHZ
5402	4822 242 72045	4.433619 MHZ

	5322 130 31684	BB809
	4822 130 30621	1N4148
	5322 130 41982	BC848B
	4822 130 44197	BC558B
	4822 130 60887	BF 840
	4822 130 40937	BC548B
	5322 130 41983	BC858B

7501	4822 209 72422	HA12083NT
7601	5322 209 11316	IC PC74HCT03P
7602	4822 209 72042	MC78L05ACP
7603	4822 209 81091	MC 14538BCP
7604	5322 209 81468	SAA1043P
7605	4822 209 72424	MC14049UBCP
7701	4822 209 71518	TDA3561
7702	4822 209 72419	MC1377

Video 2 Version 4/05

	4822 122 10177	10NF 20% 25V
	4822 121 51053	2NF 1% 250V
	4822 122 10166	22N 16V
	4822 122 33156	100NF 63V
	4822 125 50207	TRIMMING CAPACITOR 2-33PF 250V
	4822 125 50045	TRIMMING CAPACITOR 1.8-22PF 250V

	4822 111 30508	10E 5% 0.33W
	4822 111 30499	4E7 5% 0.33W
	4822 116 53027	5K6 1% 0.6W
	4822 111 30483	1E
3006	4822 100 11215	TRIMMING POTENTIOMETER 20K
3026	4822 100 11215	TRIMMING POTENTIOMETER 20K
3237	4822 100 11214	TRIMMING POTENTIOMETER 1K

	4822 156 11004	COIL 26.5 µH
	4822 157 53516	COIL 8.2 µH
	4822 157 53137	COIL 81.0 µH
	4822 157 53135	COIL 205.0 µH
	4822 157 53136	COIL 136.0 µH
	4822 242 71658	BAND PASS 684 KHZ
	4822 242 71659	BAND PASS 1066 KHZ
	4822 157 53257	COIL 37.0 µH
	4822 157 51247	COIL 150 µH
	4822 157 52874	COIL 12.5 µH L2
	4822 157 52873	COIL 5.5 µH L1
	4822 157 52875	COIL 66 µH L3
	4822 157 53131	COIL 10.9 µH
	4822 157 53258	COIL 11.0 µH
	4822 157 53259	COIL 166 NNF 10264
	4822 157 53217	COIL 7.04 µH
	4822 158 10604	COIL 0.8 µH
	4822 157 50963	COIL 6.8 µH
5301	4822 320 40051	DELAY LINE 711
5302	4822 320 40131	DELAY LINE 390
5303	4822 320 40131	DELAY LINE 270
5401	4822 242 70626	X-TAL 8.867238 MHZ
5402	4822 242 72045	X-TAL 4.433619 MHZ

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7602	4822 209 72042	MC78L05ACP
7603	4822 209 81091	MC 14538BCP
7604	5322 209 81468	SAA1043P
7605	4822 209 72424	MC14049BCP
7701	4822 209 71518	TDA3561
7702	4822 209 72419	MC1377

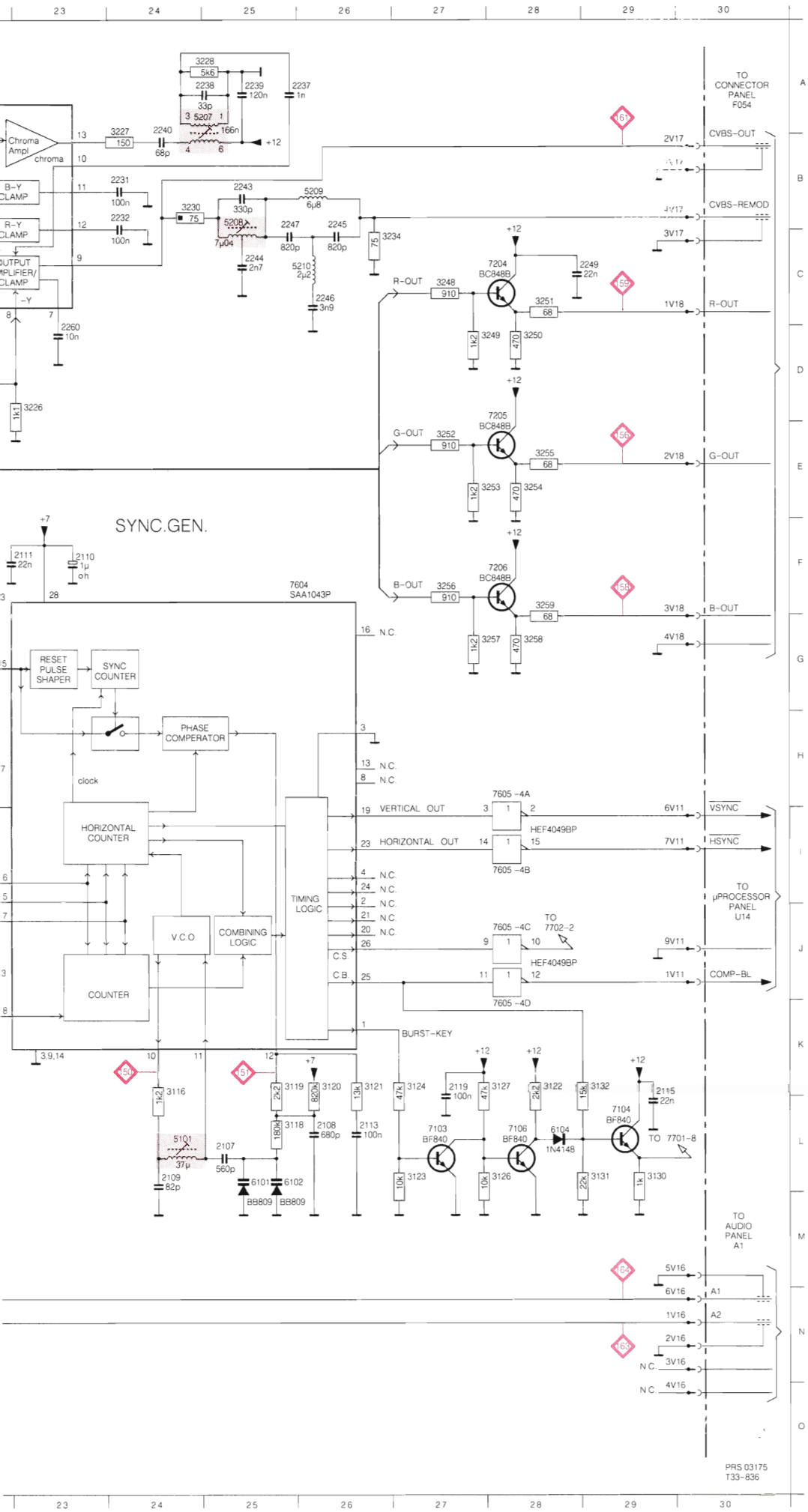
VIDEO III

CHROMA DEMODULATOR

CVBS-MODULATOR

SYNC.GEN.

AUDIO DEMODULATOR



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2005	L 3	3028	N 10	7601	E 19
2006	L 4	3029	M 9	7602	I 13
2007	K 5	3030	L 9	7603	I 16
2008	K 5	3031	L 10	7603	I 17
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2020	J 15	3043	K 21		
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2023	J 19	3046	I 4		
2024	L 22	3101	H 19		
2025	O 3	3102	H 20		
2026	O 4	3103	J 22		
2027	N 5	3104	G 20		
2028	N 5	3106	G 20		
2029	N 5	3107	F 20		
2030	N 7	3109	F 20		
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2032	N 10	3113	I 17		
2033	N 11	3116	K 24		
2034	N 11	3117	H 22		
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2040	O 7	3123	L 27		
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2052	J 8	3205	C 3		
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2111	F 23	3221	D 21		
2112	H 3	3222	D 20		
2113	L 26	3223	D 20		
2114	I 3	3224	D 18		
2115	K 29	3225	D 22		
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2201	C 2	3227	A 24		
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2205	B 2	3232	B 28		
2206	B 4	3233	B 28		
2207	B 5	3234	C 27		
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2209	A 16	3236	A 11		
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2215	A 15	3242	C 8		
2216	F 14	3243	C 7		
2217	F 14	3244	B 5		
2218	G 15	3246	B 6		
2219	B 7	3247	B 6		
2220	C 7	3248	C 27		
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2222	A 11	3250	D 28		
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2230	D 20	3258	G 28		
2231	B 24	3259	F 28		
2232	B 24	3261	A 28		
2233	D 18	5001	K 5		
2234	D 18	5002	N 5		
2235	A 20	5003	J 13		
2236	B 18	5004	N 11		
2237	A 26	5005	L 13		
2238	A 25	5006	L 9		
2239	A 25	5011	K 2		
2240	A 24	5012	N 2		
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2243	B 25	5202	C 4		
2244	C 25	5203	C 4		
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2249	C 29	5209	B 26		
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3009	L 12	7002	L 8		
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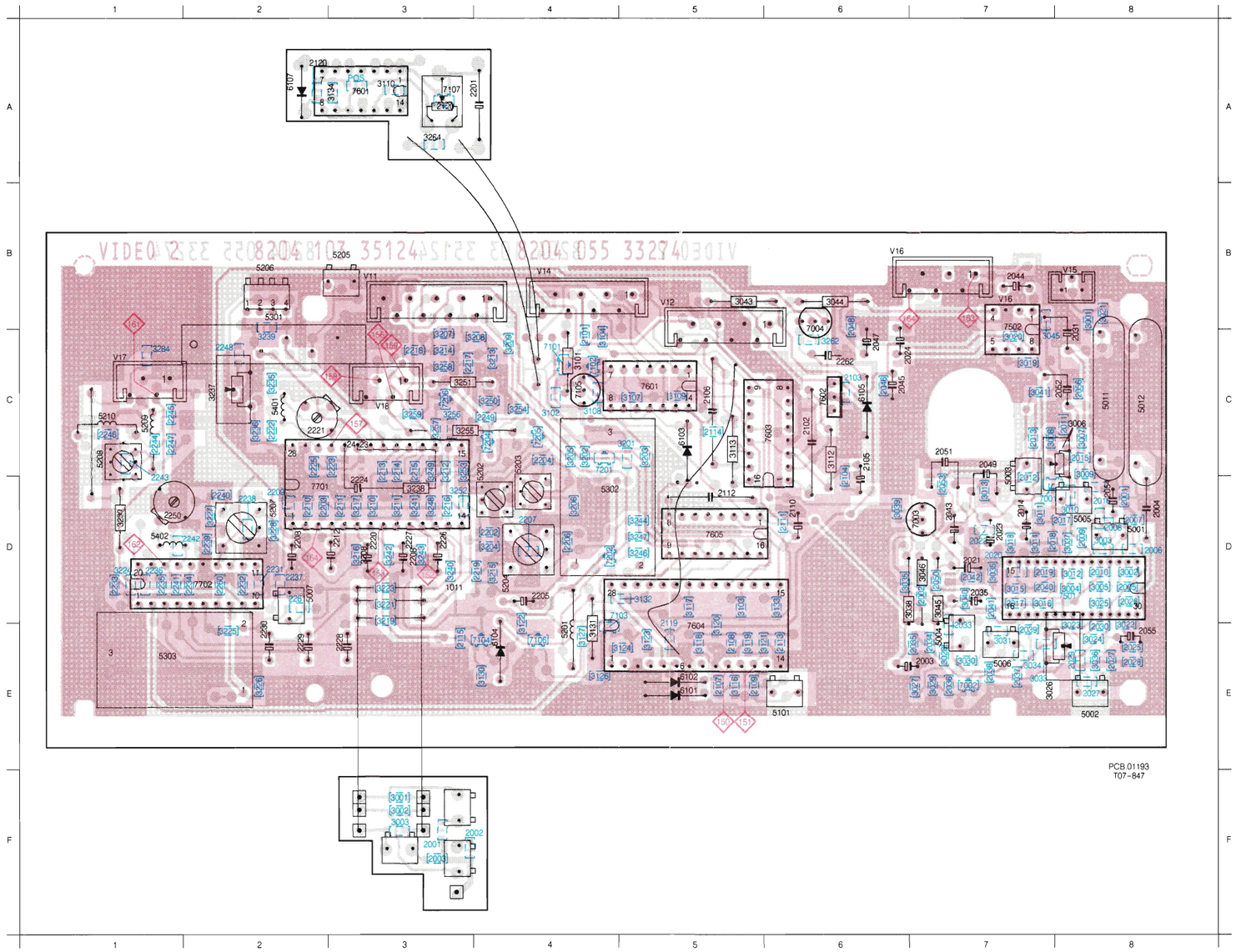

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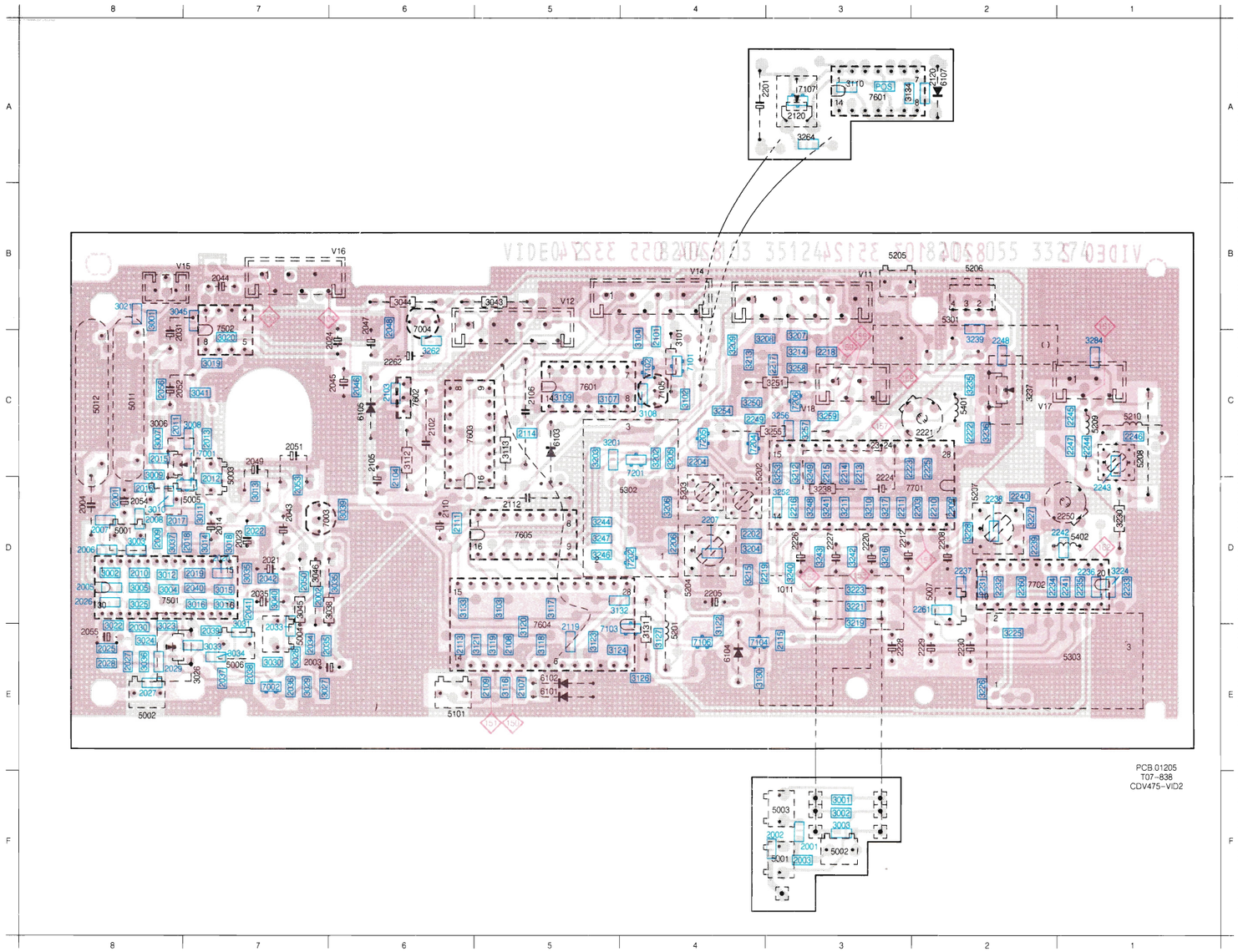
PRINT LAY-OUT CHIP SIDE VIDEO II-4



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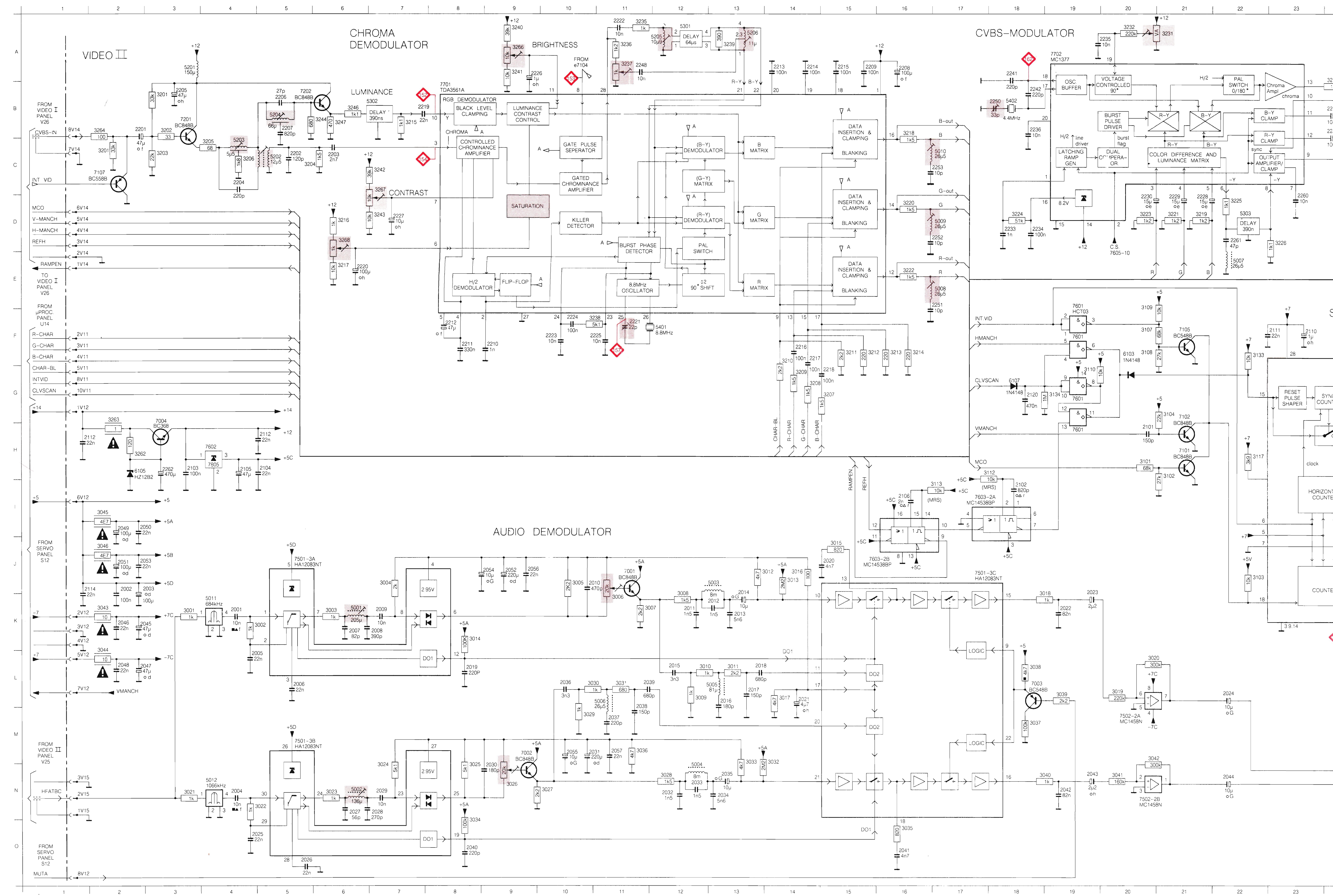
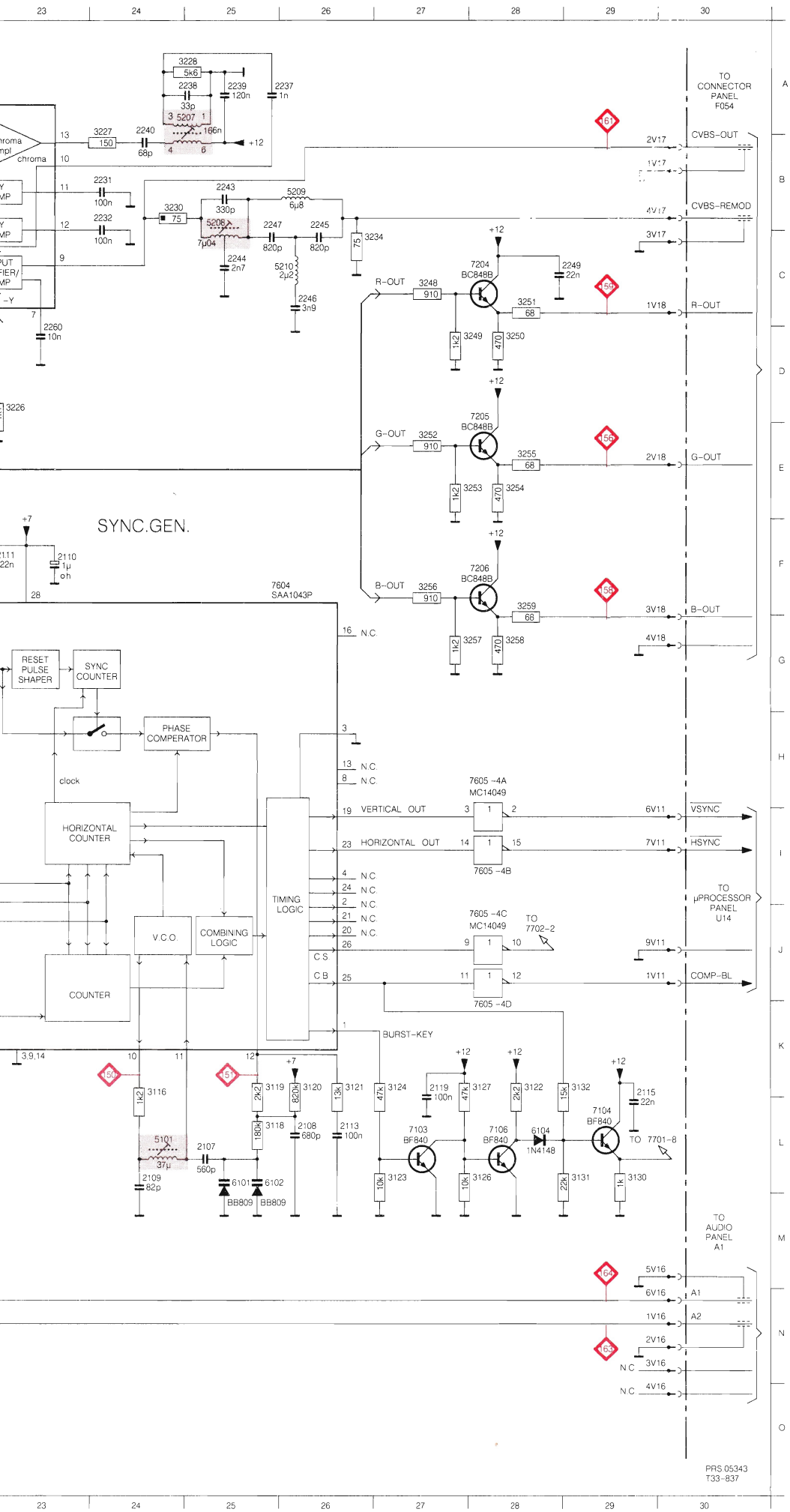
2115	E	3	3034	E	7	5001	F	3			
2119	E	5	3035	D	6	5002	E	8			
2120	A	2	3035	D	7	5002	F	3			
2120	A	3	3036	E	8	5003	C	7			
2201	A	4	3037	D	8	5003	F	3			
2202	D	4	3038	D	6	5004	E	7			
2203	D	2	3039	D	6	5005	D	8			
2204	C	4	3040	D	7	5006	E	7			
2205	D	4	3041	C	7	5007	D	2			
2206	D	4	3043	B	5	5011	C	8			
2207	D	4	3044	B	6	5012	C	8			
2208	D	2	3045	D	7	5101	E	6			
2208	D	3	3045	C	7	5201	E	4			
2208	D	3	3046	D	7	5202	C	4			
2209	D	2	3101	C	4	5203	C	4			
2210	D	2	3102	C	4	5204	D	4			
2211	D	3	3103	D	5	5205	B	3			
2212	D	3	3104	C	4	5206	B	2			
2213	C	3	3107	C	5	5207	D	2			


VIDEO II
CHROMA DEMODULATOR
BRIGHTNESS
CONTRAST
LUMINANCE
CVBS-MODULATOR
AUDIO DEMODULATOR
7701 TDA3561A
RGB DEMODULATOR
BLACK LEVEL CLAMPING
LUMINANCE CONTRAST CONTROL
CONTROLLED CHROMINANCE AMPLIFIER
GATE PULSE SEPERATOR
GATED CHROMINANCE AMPLIFIER
SATURATION
KILLER DETECTOR
BURST PHASE DETECTOR
8.8MHz OSCILLATOR
H/2 DEMODULATOR
FLIP-FLOP
(B-Y) DEMODULATOR
(G-Y) MATRIX
(R-Y) DEMODULATOR
PAL SWITCH
90° SHIFT
B MATRIX
G MATRIX
R MATRIX
DATA INSERTION & CLAMPING
BLANKING
7702 MC1377
OSC BUFFER
VOLTAGE CONTROLLED 90°
PAL SWITCH 0/180°
Chroma Ampl
BURST PULSE DRIVER
LATCHING RAMP GEN
DUAL COMPERATOR
COLOR DIFFERENCE AND LUMINANCE MATRIX
B-Y CLAMP
R-Y CLAMP
OUTPUT AMPLIFIER/ CLAMP
DELAY 390n
7501-3A HA12083NT
7501-3B HA12083NT
7501-3C HA12083NT
LOGIC
7502-2A MC1458N
7502-2B MC1458N
7603-2A MC14538BP
7603-2B MC14538BP
RESET PULSE SHAPER
HORIZONTAL COUNTER
FROM VIDEO I PANEL V26
TO VIDEO I PANEL V26
FROM µPROC. PANEL U14
FROM SERVO PANEL S12
FROM VIDEO II PANEL V25
CVBS-IN
INT VID
MCO
V-MANCH
H-MANCH
REFH
RAMPEN
R-CHAR
G-CHAR
B-CHAR
CHAR-BL
INTVID
CLVSCAN
VMANCH
HFATBC
MUTA



2001	K 4	3018	J19	6103	F20
2002	J 2	3019	L20	6104	L26
2003	J 3	3020	L20	6105	H 2
2004	N 4	3021	N 3	6107	G18
2005	L 5	3022	N 5	7001	J11
2006	L 5	3023	N 6	7002	M 9
2007	K 6	3024	N 7	7003	L18
2008	K 7	3025	N 8	7004	G 3
2009	K 7	3026	N 9	7101	H21
2010	J11	3027	N10	7102	G21
2011	K12	3028	N12	7103	L27
2012	K13	3029	M10	7104	L29
2013	K13	3030	L11	7105	F21
2014	J13	3031	L11	7106	L28
2015	L12	3032	M14	7107	C 2
2016	L13	3033	M13	7201	B 3
2017	L13	3034	O 8	7202	B 5
2018	L13	3035	O16	7204	C28
2019	L 8	3036	M11	7205	D28
2020	J15	3037	M18	7206	F28
2021	L14	3038	L18	7501	J 5
2022	K19	3039	L19	7501	M 5
2023	J19	3040	N19	7501	J17
2024	L22	3041	N20	7601	E19
2025	O 5	3042	M20	7601	F19
2026	O 5	3043	K 2	7601	G19
2027	N 6	3044	K 2	7601	H19
2028	N 7	3045	I 2	7602	H 4
2029	N 7	3046	J 2	7603	J16
2030	N 9	3101	H20	7603	I 17
2031	M11	3102	H21	7604	F26
2032	N12	3103	J22	7605	H28
2033	N12	3104	G21	7605	J28
2034	N13	3107	F20	7605	I 28
2035	N13	3108	F20	7605	K28
2036	L10	3109	E20	7701	B 8
2037	M11	3110	G19	7702	A19
2038	L11	3112	H18		
2039	L12	3113	I 17		
2040	O 8	3116	K24		
2041	O16	3117	H22		
2042	N19	3118	L26		
2043	N19	3119	K26		
2044	N22	3120	K26		
2045	K 3	3121	K26		
2046	K 2	3122	K28		
2047	L 3	3123	L27		
2048	L 2	3124	K27		
2049	I 2	3126	L28		
2050	I 3	3127	K28		
2051	J 2	3130	L29		
2052	J 9	3131	L29		
2053	J 3	3132	K29		
2054	J 9	3133	F22		
2055	M10	3134	G19		
2056	J 9	3201	B 3		
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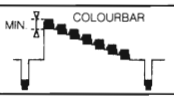
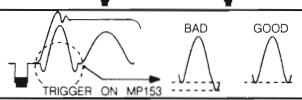
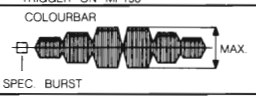
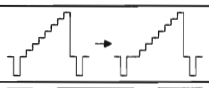
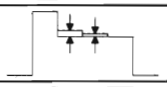
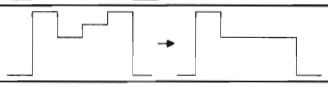
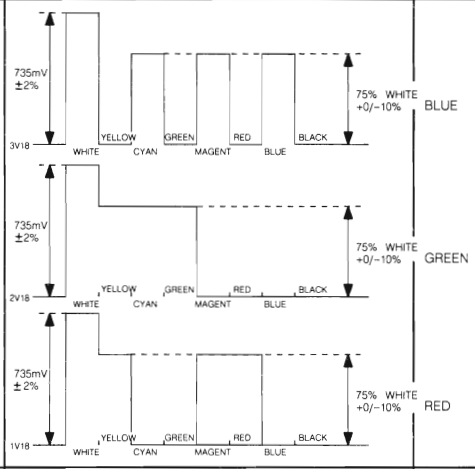
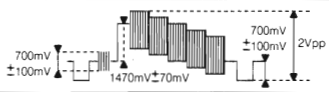
2101	H20	3202	B 3		
2102	I 18	3203	C 3		
2103	H 3	3204	C 6		
2104	H 5	3205	C 4		
2105	H 4	3206	C 4		
2106	I 16	3207	G15		
2107	L25	3208	G14		
2108	L26	3209	G14		
2109	L24	3210	F14		
2110	F23	3211	F15		
2111	F23	3212	F16		
2112	H 2	3213	F16		
2112	H 5	3214	F16		
2113	L26	3215	B 7		
2114	J 2	3216	D 6		
2115	K29	3217	E 6		
2119	K27	3218	B16		
2120	G18	3219	D21		
2201	B 2	3220	D16		
2202	C 5	3221	D21		
2203	C 6	3222	E16		
2204	C 4	3223	D20		
2205	B 3	3224	D18		
2206	B 5	3225	D22		
2207	B 5	3226	D23		
2208	A16	3227	A24		
2209	A15	3228	A25		
2210	F 9	3230	B24		
2211	F 8	3231	A21		
2212	F 8	3232	A20		
2213	A14	3234	C27		
2214	A14	3235	A11		
2215	A15	3236	A11		
2216	F14	3237	A11		
2217	F14	3238	F11		
2218	G15	3239	A13		
2219	B 7	3240	A 9		
2220	E 6	3241	A 9		
2221	F11	3242	C 7		
2222	A11	3243	D 7		
2223	F10	3244	B 6		
2224	F10	3246	B 6		
2225	F11	3247	B 6		
2226	A 9	3248	C27		
2227	D 7	3249	D28		
2228	D21	3250	D28		
2229	D21	3251	C28		
2230	D20	3252	E27		
2231	B24	3253	E28		
2232	B24	3254	E28		
2233	D18	3255	E28		
2234	D18	3256	F27		
2235	A20	3257	G28		
2236	B18	3258	G28		
2237	A26	3259	F28		
2238	A25	3262	H 2		
2239	A25	3263	G 2		
2240	A24	3264	B 2		
2241	A18	3266	A 9		
2242	B18	3267	C 7		
2243	B25	3268	D 6		
2244	C25	5001	K 6		
2245	B26	5002	N 6		
2246	C26	5003	J13		
2247	B25	5004	N12		
2248	A11	5005	L13		
2249	C29	5006	L11		
2250	B18	5007	E22		
2251	E17	5008	E17		
2252	D17	5009	D17		
2253	C17	5010	C17		
2260	D23	5011	K 4		
2261	D22	5012	N 4		
2262	H 3	5101	L24		
3001	K 3	5201	A 3		
3002	K 5	5202	C 5		
3003	K 6	5203	C 4		
3004	J 7	5204	B 5		
3005	J10	5205	A12		
3006	K11	5206	A13		
3007	K12	5207	A25		
3008	J12	5208	B25		
3009	L12	5209	B26		
3010	L12	5210	C26		
3011	L13	5301	A12		
3012	J14	5302	B 7		
3013	J14	5303	D22		
3014	K 8	5401	F12		
3015	J15	5402	B18		
3016	J14	6101	L25		
3017	L14	6102	L25		

VIDEO II

MEASUREMENTS AND ADJUSTMENTS SYNC. GENERATOR

STEP	SIGNAL	MODE	◇				REMARKS
1	FREQUENCY	STOP	150	5101	FREQ. COUNTER		5MHz ±10kHz COARSE
2	DC-LEVEL	STOP	151	5101		3,5V ±50mV	FINE

MEASUREMENTS AND ADJUSTMENTS LUM./CHROM./R.G.B.

STEP	SIGNAL	MODE	◇				REMARKS
1	LUMINANCE	VIDEO TEST DISC COLOURBAR STILL PICTURE	152	5203			ADJUST FOR A MINIMUM COLOUR SIGNAL
2	LUMINANCE	VIDEO TEST DISC PICT. NO 10427	152 153	5204			
3	CHROMINANCE	VIDEO TEST DISC COLOURBAR STILL PICTURE	154	5202			ADJUST FOR MAXIMUM CHROMINANCE
4	VENETIAN BLINDS	VIDEO TEST DISC COLOURBAR STILL PICTURE	TV SCREEN	3237			ADJUST FOR MINIMUM "BLINDS" IN THE MAGENTA COLOUR
5	BRIGHTNESS	VIDEO TEST DISC GREY-SCALE STILL PICTURE	156	3266			BLANKING LEVEL = BLACK LEVEL
6	CONTRAST	VIDEO TEST DISC WHITE PICTURE STILL PICTURE	156	3267			
7	R.G.B.	VIDEO TEST DISC COLOURBAR STILL PICTURE	156	5205 OR 5206			ADJUST FOR MINIMAL JITTER
8	SATURATION	VIDEO TEST DISC COLOURBAR STILL PICTURE	156	3268			
9	SUB. CARRIER	VIDEO TEST DISC COLOURBAR	157	2221	FREQ. COUNTER 8.86MHz		
10	R.G.B.	VIDEO TEST DISC COLOURBAR	156 158 159				
11	C.V.B.S	VIDEO TEST DISC COLOURBAR	161				
12	SUB. CARRIER CVBS MOD.	VIDEO TEST DISC COLOURBAR	162	2250	FREQ. COUNTER 4,433619MHz ±30Hz		

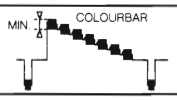
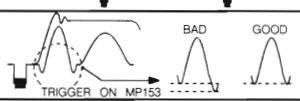
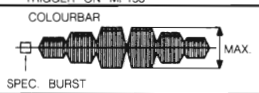
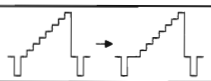
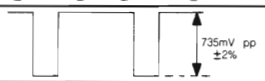
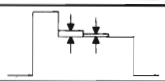
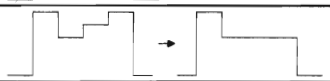
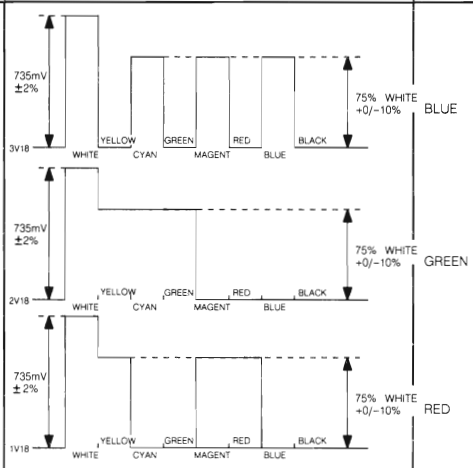
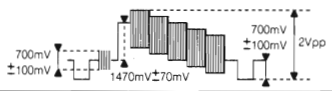
MEASUREMENTS AND ADJUSTMENTS AUDIO

STEP	SIGNAL	MODE	◇				REMARKS
1	AUDIO L+R	VIDEO TEST DISC PICT NO 4615-5399 A-B REP	163 164	3006 3026	R.M.S CINCH 625mV SCART 310mV		PM6309 DISTORTION METER
2	AUDIO DISTORTION	VIDEO TEST DISC PICT NO 4615-5399 A-B REP	163 164	5001 5002	⩾0.6%		PM6309 DISTORTION METER

NC. ADJUSTMENTS SYNC. GENERATOR

MODE	◇				REMARKS
STOP	150	5101	FREQ. COUNTER		5MHz ±10kHz COARSE
STOP	151	5101		3.5V ±50mV	FINE

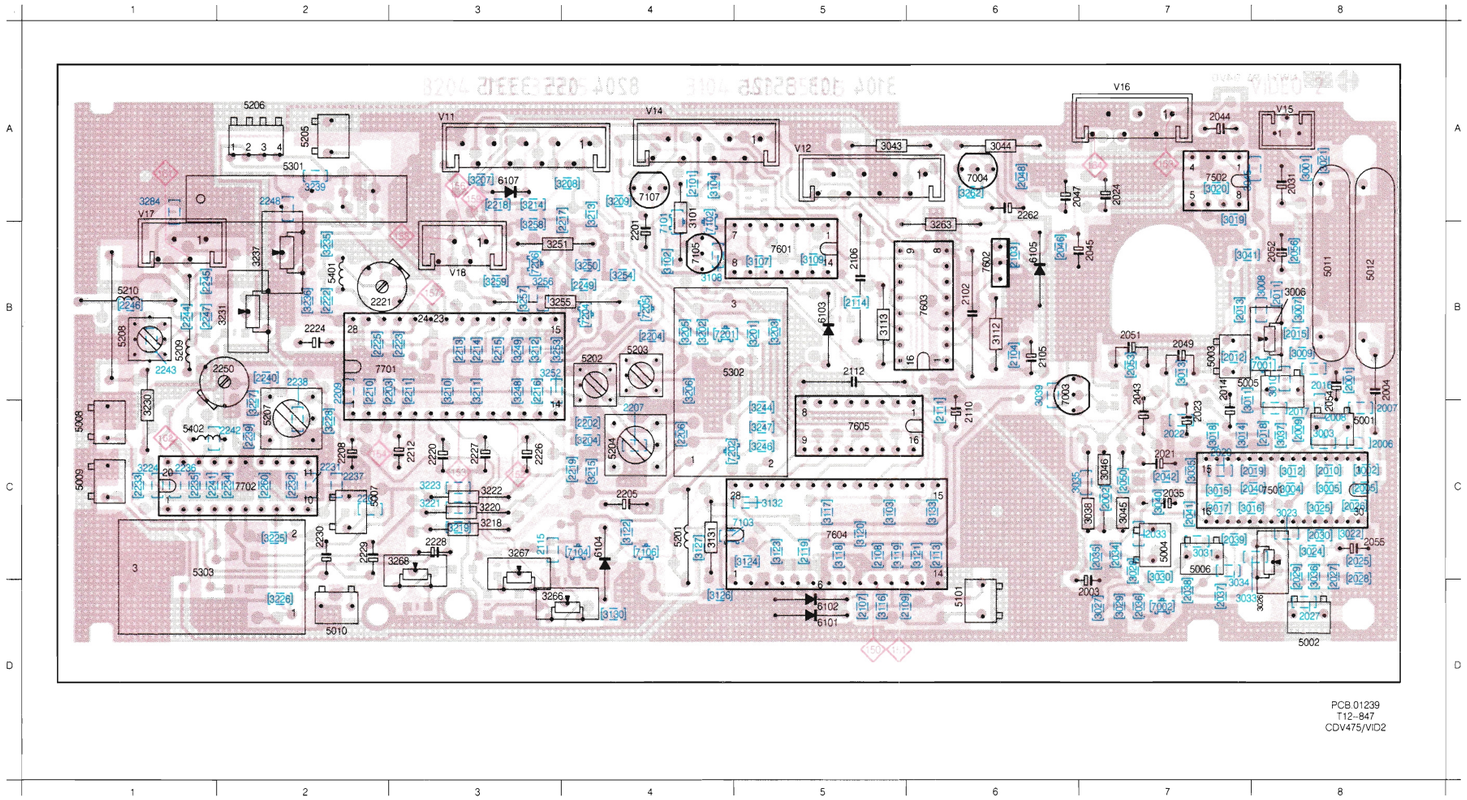
NC. ADJUSTMENTS LUM./CHROM./R.G.B.

MODE	◇				REMARKS
VIDEO TEST DISC COLOURBAR STILL PICTURE	152	5203			ADJUST FOR A MINIMUM COLOUR SIGNAL
VIDEO TEST DISC PICT. NO 10427	152 153	5204			
VIDEO TEST DISC COLOURBAR STILL PICTURE	154	5202			ADJUST FOR MAXIMUM CHROMINANCE
VIDEO TEST DISC COLOURBAR STILL PICTURE	TV SCREEN	3237			ADJUST FOR MINIMUM "BLINDS" IN THE MAGENTA COLOUR
VIDEO TEST DISC GREY-SCALE STILL PICTURE	156	3266			BLANKING LEVEL = BLACK LEVEL
VIDEO TEST DISC WHITE PICTURE STILL PICTURE	156	3267			
VIDEO TEST DISC COLOURBAR STILL PICTURE	156	5205 OR 5206			ADJUST FOR MINIMAL JITTER
VIDEO TEST DISC COLOURBAR STILL PICTURE	156	3268			
VIDEO TEST DISC COLOURBAR	157	2221	FREQ. COUNTER 8.86MHz		
VIDEO TEST DISC COLOURBAR	156 158 159				
VIDEO TEST DISC COLOURBAR	161				
VIDEO TEST DISC COLOURBAR	162	2250	FREQ. COUNTER 4.433619MHz ±30Hz		

NC. ADJUSTMENTS AUDIO

MODE	◇				REMARKS
VIDEO TEST DISC PICT.NO 4615-5399 A-B REP.	163 164	3006 3026	R.M.S CINCH 625mV SCART 310mV		PM6309 DISTORTION METER
VIDEO TEST DISC PICT.NO 4615-5399 A-B REP.	163 164	5001 5002	⩾0.6%		PM6309 DISTORTION METER

MDA 01593
T32-840



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2002	C 7	2110	C 6	3006	B 8	3201	B 5	5011	B 8
2003	D 7	2111	C 6	3007	B 8	3202	B 4	5012	B 8
2004	B 8	2112	B 5	3008	B 8	3203	B 5	5101	D 6
2005	C 8	2113	C 6	3009	B 8	3204	C 4	5201	C 4
2006	C 8	2114	B 5	3010	B 8	3205	B 4	5202	B 4
2007	C 8	2115	C 3	3011	B 7	3206	B 4	5203	B 4
2008	C 8	2119	C 5	3012	C 8	3207	A 3	5204	C 4
2009	C 8	2201	B 4	3013	B 7	3208	A 4	5205	A 2
2010	C 8	2202	C 4	3014	C 7	3209	A 4	5206	A 2
2011	B 8	2203	B 2	3015	C 7	3210	B 3	5207	C 2
2012	B 7	2204	B 4	3016	C 8	3211	B 3	5208	B 1
2013	B 7	2205	C 4	3017	C 7	3212	B 3	5209	B 1
2014	B 7	2206	C 4	3018	C 7	3213	A 4	5210	B 1
2015	B 8	2207	C 4	3019	A 7	3214	A 3	5301	A 2
2016	B 8	2208	C 2	3020	A 7	3215	C 4	5302	B 5
2017	C 8	2209	C 2	3021	A 8	3217	B 3	5303	C 1
2018	C 8	2210	B 2	3022	C 8	3218	C 3	5401	B 2
2019	C 8	2211	B 3	3023	C 8	3219	C 3	5402	C 1
2020	C 7	2212	C 3	3024	C 8	3220	C 3	6101	D 5
2021	C 7	2213	B 3	3025	C 8	3221	C 3	6102	D 5
2022	C 7	2214	B 3	3026	D 8	3222	C 3	6103	B 5
2023	C 7	2215	B 3	3027	D 7	3223	C 3	6104	C 4
2024	A 7	2216	B 3	3028	C 7	3224	C 1	6105	B 6
2025	C 8	2217	A 4	3029	D 7	3225	C 2	6107	A 3
2026	C 8	2218	A 3	3030	C 7	3226	D 2	7001	B 8
2027	D 8	2219	C 4	3031	C 7	3227	B 2	7002	D 7
2027	C 8	2220	C 3	3033	D 7	3228	C 2	7003	C 7
2028	D 8	2221	B 2	3034	D 7	3230	C 1	7004	A 6
2029	C 8	2222	B 2	3035	C 6	3231	B 2	7101	B 4
2030	C 8	2223	B 3	3035	C 7	3235	B 2	7102	A 4
2031	A 8	2224	B 2	3036	C 8	3236	B 2	7103	C 5
2033	C 7	2225	B 2	3037	C 8	3237	B 2	7104	C 4
2034	C 7	2226	C 3	3038	C 7	3239	A 2	7105	B 4
2035	C 7	2227	C 3	3039	B 6	3241	B 3	7106	C 4
2035	C 7	2228	C 3	3040	C 7	3244	B 3	7107	A 4
2036	D 7	2229	C 2	3041	B 7	3246	C 5	7201	B 4
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2041	C 7	2234	C 2	3046	C 7	3251	B 4	7501	C 8
2042	C 7	2235	C 1	3101	A 4	3252	B 3	7502	A 7
2043	B 7	2236	C 1	3102	B 4	3253	B 3	7601	B 5
2044	A 7	2237	C 2	3103	C 5	3254	B 4	7602	B 6
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2104	B 6	2262	A 6	3126	D 4	5005	C 8		
2105	B 6	3001	A 8	3127	C 4	5006	C 7		
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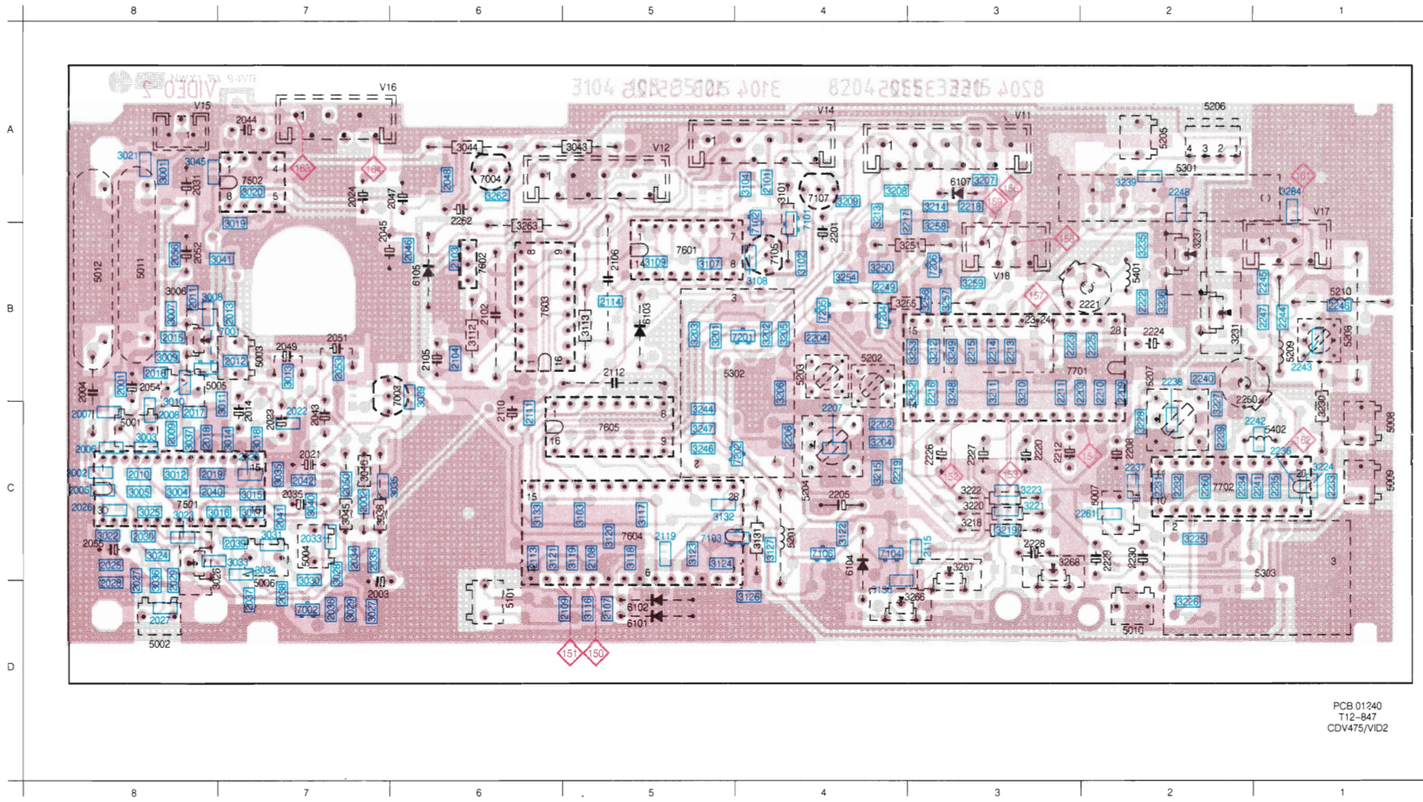

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2019	C 8	2211	B 3	3023	C 8	3219	C 3	5402	C 1	2019	C 8	2211	B 3	3023	C 8	3219	C 3	5402	C 1
2020	C 7	2212	C 3	3024	C 8	3220	C 3	6101	D 5	2020	C 7	2212	C 3	3024	C 8	3220	C 3	6101	D 5
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2038	D 7	2230	C 2	3043	A 5	3247	C 5	7202	C 4	2037	D 7	2230	C 2	3043	A 5	3247	C 5	7202	C 4
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2044	A 7	2236	C 1	3102	B 4	3253	B 3	7601	B 5	2043	B 7	2236	C 1	3102	B 4	3253	B 3	7601	B 5
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2101	A 4	2249	B 4	3121	C 6	5001	C 8			2056	B 8	2249	B 4	3121	C 6	5001	C 8		
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2103	B 6	2260	C 2	3123	C 5	5003	B 7			2102	B 6	2260	C 2	3123	C 5	5003	B 7		
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PARTSLIST VIDEO II-5

	4822 122 10177	10NF 20% 25V	
	4822 121 51053	2NF 1% 250V	
	4822 122 10166	TUBULAR 22N 16V	
	4822 122 33156	100NF 63V	
2221	4822 125 50045	TRIMMING 1.8-22PF 250V	CAPACITOR
2250	4822 125 50207	TRIMMING 2-33PF 250V	CAPACITOR

3269	4822 100 11214	TRIMMING 1K	POTENTIOMETER
3006	4822 100 11215	TRIMMING 20K	POTENTIOMETER
3026	4822 100 11215	TRIMMING 20K	POTENTIOMETER
3237	4822 100 11214	TRIMMING 1K	POTENTIOMETER
3266	5322 101 14066	TRIMMING 10K PM10	POTENTIOMETER
3267	5322 101 14066	TRIMMING 10K PM10	POTENTIOMETER
3268	5322 101 10294	TRIMMING 1K PM 20	POTENTIOMETER
	4822 111 30508	10E 5% 0.33W	
	4822 111 30508	10E 5% 0.33W	
	4822 111 30499	4E7 5% 0.33W	
	4822 116 53027	5K6 1% 06W	
	4822 111 30483	SAFETY.RES 1E PM5	

5001	4822 156 11004	COIL 26.5 µH
5001	4822 157 53135	C3TV-FN 205.0 µH
5002	4822 157 53136	C3TV-FN 136.0 µH
5002	4822 156 11004	COIL 26.5 µH
5003	4822 157 53516	COIL 8.2 µH
5003	4822 156 11004	COIL 26.5 µH
5004	4822 157 53516	COIL 8.2 µH
5005	4822 157 53137	COIL 81.0 µH
5006	4822 156 11004	COIL 26.5 µH
5007	4822 156 11004	COIL 26.5 µH
5011	4822 242 71658	BAND PASS FILTER 684 KHZ
5012	4822 242 71659	BAND PASS FILTER 1066 KHZ
5101	4822 157 53257	COIL 37.0 µH
5201	4822 157 51247	COIL 150 µH
5202	4822 157 52874	COIL 12.5 µH L2
5203	4822 157 52873	COIL 5.5 µH L1
5204	4822 157 52875	COIL 66 µH L3
5205	4822 157 53131	COIL 10.9 µH
5206	4822 157 53258	COIL 11.0 µH
5207	4822 157 53259	COIL 166 NNF 10264
5208	4822 157 53217	COIL 7.04 µH
5209	4822 158 10604	COIL 6.8 µH
5210	4822 157 50963	COIL 2.2 µH
5301	4822 320 40051	DELAY LINE 771
5302	4822 320 40131	DELAY LINE 390
5303	4822 320 40131	DELAY LINE 270
5401	4822 242 70626	8.867238 MHZ
5402	4822 242 72045	4.433619 MHZ

	5322 130 31684	BB809
	4822 130 30621	1N4148

	5322 130 41982	BC848B
	4822 130 44197	BC558B
	4822 130 40937	BC548B
	4822 130 60887	BF840
	5322 130 41983	BC858B
	5322 130 41982	BC848B

7501	4822 209 72422	HA12083NT
7601	5322 209 11316	IC PC74HCT03P
7602	4822 209 72042	MC78L05ACP
7603	4822 209 81091	MC 14538BCP
7604	5322 209 81468	SAA1043P
7605	4822 209 72424	MC14049UBCP
7701	4822 209 71518	TDA3561
7702	4822 209 72419	MC1377

PARTSLIS

Various

PARTSLIST VIDEO II-5/05

Various

	4822 122 10177	10NF 20% 25V
	4822 121 51053	2NF 1% 250V
	4822 122 10166	22N 16V
	4822 122 33156	100NF 63V
	4822 125 50207	CAP TRIMMER 2-33PF 250V
	4822 125 50045	CAP TRIMMER 1.8-22PF 250V

	4822 111 30508	10E 5% 0.33W
	4822 111 30499	4E7 5% 0.33W
	4822 116 53027	5K6 1% 0.6W
	4822 111 30483	1E
3006	4822 100 11215	TRIMMING POTENTIOMETER 20K
3026	4822 100 11215	TRIMMING POTENTIOMETER 20K
3237	4822 100 11214	TRIMMING POTENTIOMETER 1K
3266	5322 101 14066	TRIMMING POTENTIOMETER 10K PM10
3267	5322 101 14066	TRIMMING POTENTIOMETER 10K PM10
3268	5322 101 10294	TRIMMING POTENTIOMETER 1K PM10

	4822 156 11004	COIL 26.5 µH
	4822 157 53516	COIL 8.2 µH
	4822 157 53137	COIL 81.0 µH
	4822 157 53135	COIL 205.0 µH
	4822 157 53136	COIL 136.0 µH
	4822 242 71658	BAND PASS 684 KHZ
	4822 242 71659	BAND PASS 1066 KHZ
	4822 157 53257	COIL 37.0 µH
	4822 157 51247	COIL 150 µH
	4822 157 52874	COIL 12.5 µH L2
	4822 157 52873	COIL 5.5 µH L1
	4822 157 52875	COIL 66 µH L3
	4822 157 53131	COIL 10.9 µH
	4822 157 53258	COIL 11.0 µH
	4822 157 53259	COIL 166 NNF 10264
	4822 157 53217	COIL 7.04 µH
	4822 158 10604	COIL 0.8 µH
	4822 157 50963	COIL 6.8 µH
5301	4822 320 40051	DELAY LINE 711
5302	4822 320 40131	DELAY LINE 390
5303	4822 320 40131	DELAY LINE 270
5401	4822 242 70626	X-TAL 8.867238 MHZ
5402	4822 242 72045	X-TAL 4.433619 MHZ

6101	5322 130 31684	BB809
6102	5322 130 31684	BB809
6103	4822 130 30621	1N4148
6104	4822 130 30621	1N4148

7001	5322 130 41982	BC848B
7002	5322 130 41982	BC848B
7003	4822 130 44197	BC558B
7101	5322 130 41982	BC848B
7102	5322 130 41982	BC848B
7103	4822 130 60887	BF 840
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7105	4822 130 40937	BC548B
7106	4822 130 60887	BF840
7201	5322 130 41982	BC848B
7202	5322 130 41982	BC848B
7204	5322 130 41982	BC848B
7205	5322 130 41982	BC848B
7206	5322 130 41982	BC848B

7501	4822 209 72422	HA12083NT
7602	4822 209 72042	MC78L05ACP
7603	4822 209 81091	MC 14538BCP
7604	5322 209 81468	SAA1043P
7605	4822 209 72424	MC14049BCP
7701	4822 209 71518	TDA3561
7702	4822 209 72419	MC1377

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2002 F 3 2006 F 9 2010 F 9 2014 E14 2017 E17 2022 F20 2026 E20 3101 F 2 3105 E 3 3109 G 4 3113 G 7 3117 C 7 3121 E10 3125 E12 3129 E13 3133 F15 3137 E18 3141 E18 3145 E20 3149 E21 3153 E21 6103 D15 7103 E 5 7107 C 8 7111 E13 7115 E18
2003 F 4 2007 E 7 2011 G10 2015 D15 2018 D18 2023 D21 2026 E21 3102 E 2 3106 E 4 3110 F 6 3114 D 6 3118 E 9 3122 E11 3126 F12 3130 F17 3138 F18 3142 E18 3146 E20 3150 E21 5101 F 4 6104 E15 7104 F 7 7108 E10 7112 E14 7116 F18
2004 F 4 2008 E 8 2012 E12 2015 F18 2020 E19 2024 D22 2028 F15 3103 E 3 3107 E 4 3111 F 6 3115 D 8 3119 E 9 3123 F11 3127 E13 3131 D15 3135 B15 3139 F18 3143 E19 3147 F20 3151 E 2 6101 E 7 7101 E 2 7105 E 6 7109 E11 7113 E16 7117 E19

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

NOISE REDUCTION PANEL VIDEO III

STEP	SIGNAL	MODE	◇	⟋	▯	▭	REMARKS
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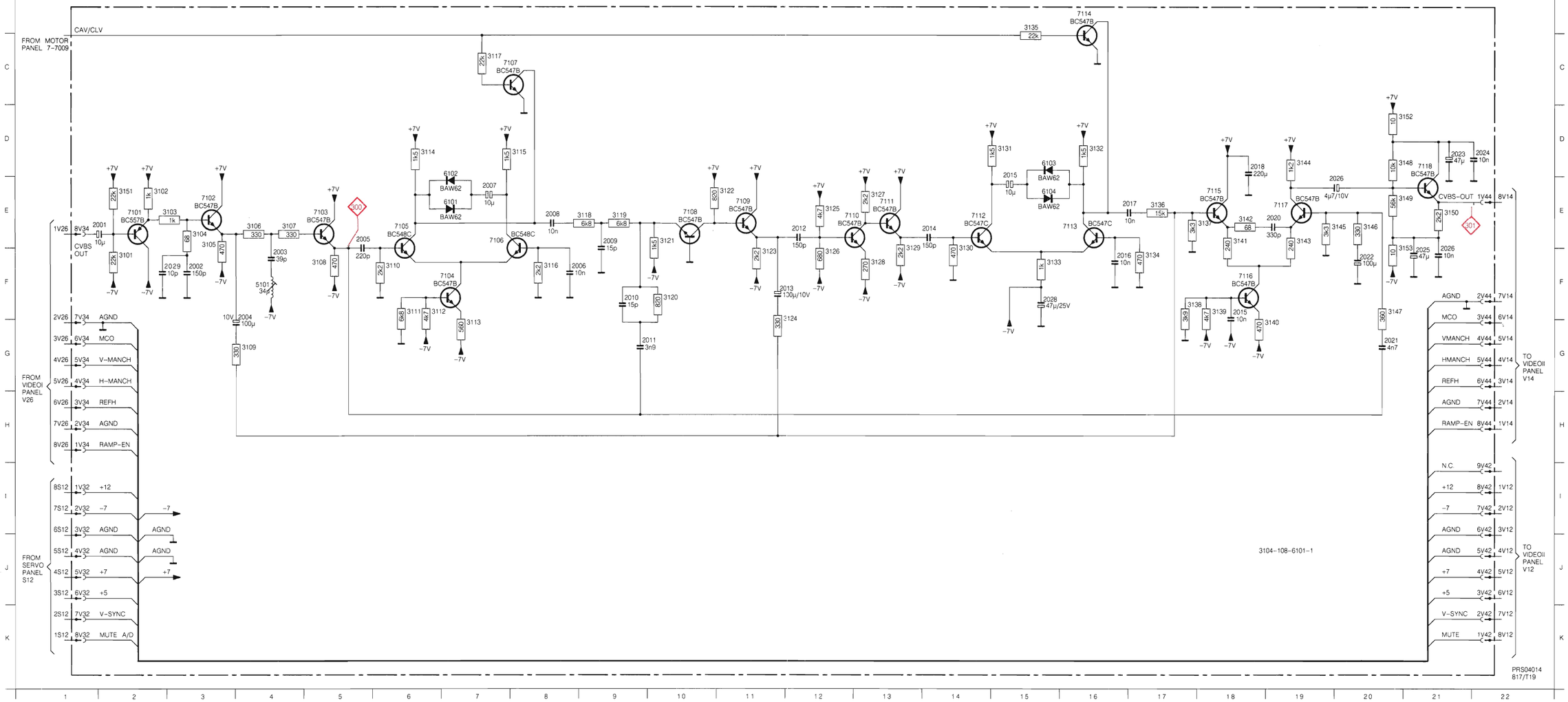
		COLOUR BAR STILL PICT.					
	CVBS		301			2Vpp	2Vpp



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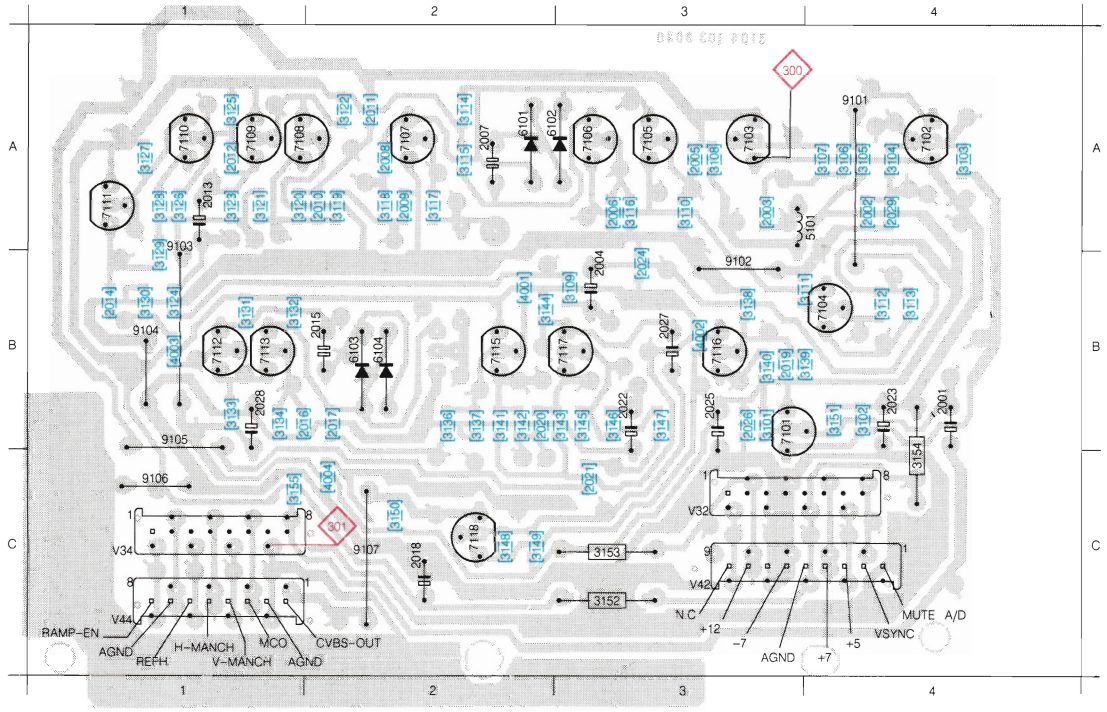
2002	A 4	2013	A 1	2024	B 3	3106	A 4	3117	A 2	3128	A 1	3140	B 3	3151	B 4	6102	A 2	7109	A 1	9103	A 1
2003	A 3	2014	B 1	2025	B 3	3107	A 4	3118	A 2	3129	A 1	3141	B 2	3152	C 3	6103	B 2	7110	A 1	9104	B 1
2004	B 3	2015	B 2	2026	B 3	3108	A 3	3119	A 2	3130	B 1	3142	B 2	3153	C 3	6104	B 2	7111	A 1	9105	B 1
2005	A 3	2016	B 1	2027	B 3	3109	B 3	3120	A 1	3131	B 1	3143	B 3	3154	C 4	7101	B 3	7112	B 1	9106	C 1
2006	A 3	2017	B 2	2028	B 1	3110	A 3	3121	A 1	3132	B 1	3144	B 2	3155	C 1	7102	A 4	7113	B 1	9107	C 2
2007	A 2	2018	C 2	2029	A 4	3111	B 3	3122	A 2	3133	B 1	3145	B 3	4001	B 2	7103	A 3	7115	B 2		
2008	A 2	2019	B 3	3101	B 3	3112	B 4	3123	A 1	3134	B 1	3146	B 3	4002	B 3	7104	B 4	7116	B 3		
2009	A 2	2020	B 2	3102	B 4	3113	B 4	3124	B 1	3136	B 2	3147	B 3	4003	B 1	7105	A 3	7117	B 3		
2010	A 2	2021	C 3	3103	A 4	3114	A 2	3125	A 1	3137	B 2	3148	C 2	4004	C 2	7106	A 3	7118	C 2		
2011	A 2	2022	B 3	3104	A 4	3115	A 2	3126	A 1	3138	B 3	3149	C 2	5101	A 4	7107	A 2	9101	A 4		



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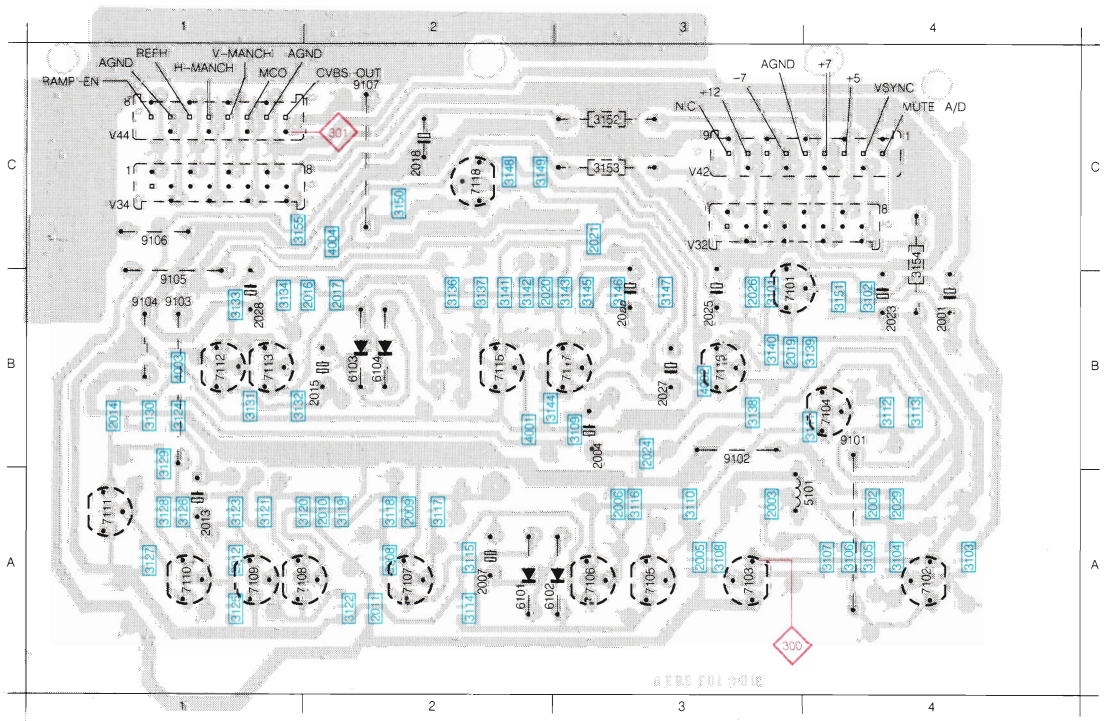
2002	A 4	2013	A 1	2024	B 3	3106	A 4	3117	A 2	3128	A 1	3140	B 3	3151	B 4	6102	A 2	7109	A 1	9103	A 1
2003	A 3	2014	B 1	2025	B 3	3107	A 4	3118	A 2	3129	A 1	3141	B 2	3152	C 3	6103	B 2	7110	A 1	9104	B 1
2004	B 3	2015	B 2	2026	B 3	3108	A 3	3119	A 2	3130	B 1	3142	B 2	3153	C 3	6104	B 2	7111	A 1	9105	B 1
2005	A 3	2016	B 1	2027	B 3	3109	B 3	3120	A 1	3131	B 1	3143	B 3	3154	C 4	7101	B 3	7112	B 1	9106	C 1
2006	A 3	2017	B 2	2028	B 1	3110	A 3	3121	A 1	3132	B 1	3144	B 2	3155	C 1	7102	A 4	7113	B 1	9107	C 2
2007	A 2	2018	C 2	2029	A 4	3111	B 3	3122	A 2	3133	B 1	3145	B 3	4001	B 2	7103	A 3	7115	B 2		
2008	A 2	2019	B 3	3101	B 3	3112	B 4	3123	A 1	3134	B 1	3146	B 3	4002	B 3	7104	B 4	7116	B 3		
2009	A 2	2020	B 2	3102	B 4	3113	B 4	3124	B 1	3136	B 2	3147	B 3	4003	B 1	7105	A 3	7117	B 3		
2010	A 2	2021	C 3	3103	A 4	3114	A 2	3125	A 1	3137	B 2	3148	C 2	4004	C 2	7106	A 3	7118	C 2		
2011	A 2	2022	B 3	3104	A 4	3115	A 2	3126	A 1	3138	B 3	3149	C 2	5101	A 4	7107	A 2	9101	A 4		

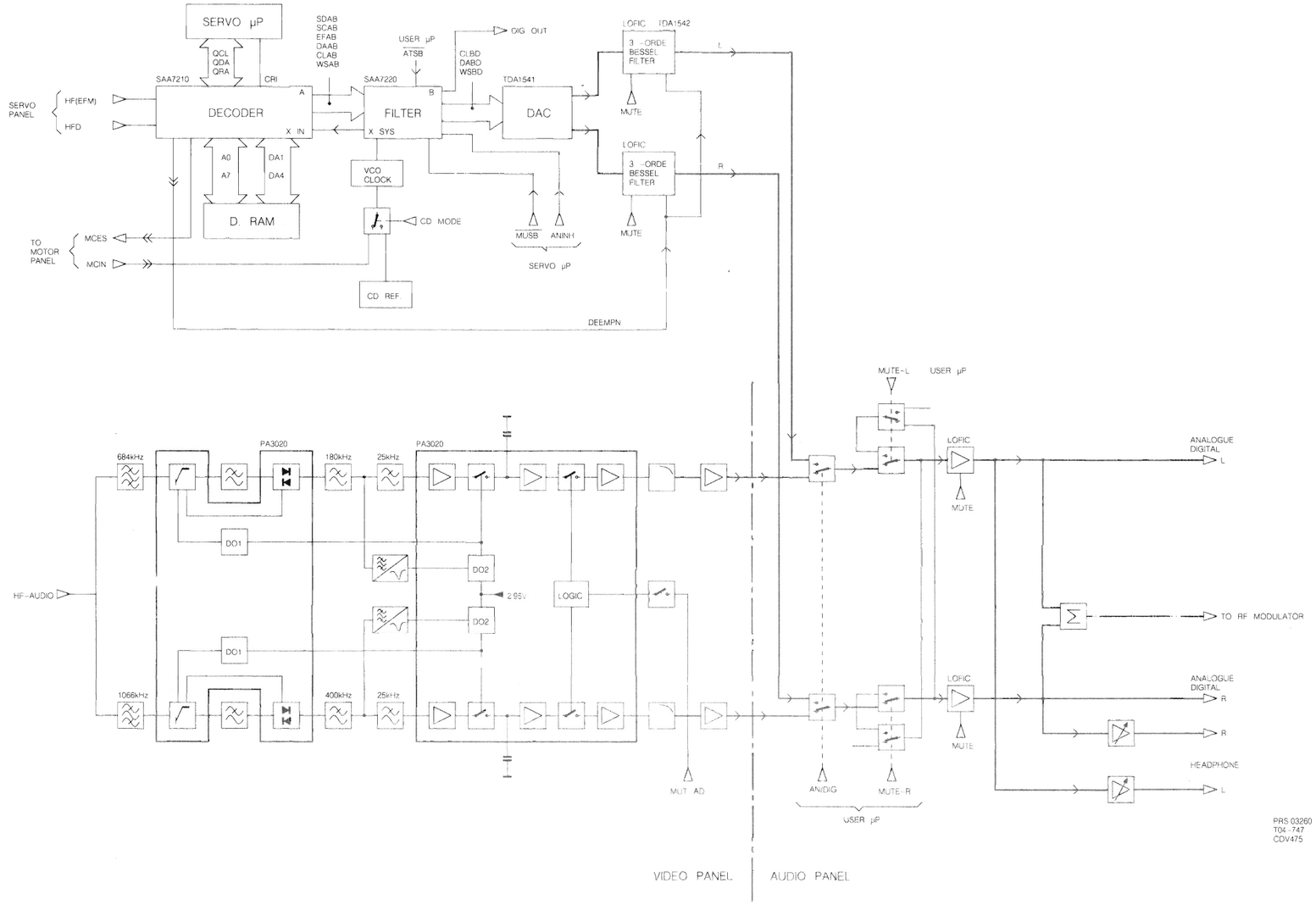


PCB 01230
T07–838

Video 3 Panel

⊣⊢	
	4822 124 41558 CAP. BIP 10µF 25V
⊣◁	
	4822 130 40959 BC 546B 4822 130 44196 BC 548C

AUDIO BLOCKDIAGRAM



AUDIO PANEL

	4822 121 50879	2.2NF 160V
	4822 111 30499	4E7 5% 0.33W
	4822 111 30483	1R 5% 0.33W
	4822 111 30522	33E 5% 0.33W
	4822 111 30508	10E 5% 0.33W
	4822 111 30535	100E 5% 0.33W
	4822 116 52398	150E 5%
	4822 116 52407	220E 5%
3092	4822 100 10872	TRIMMING POTENTIOMETER 47K
5099	4822 158 10101	COIL
5101	4822 157 51193	470 µH PM10
5102	4822 157 51193	470 µH PM10
5160	4822 242 71644	X-TAL 11.289600 MHZ
5061	4822 148 80281	DIGITAL-OUT TRANSFORMER
	4822 130 42696	BC818-25
	4822 130 42131	BF550
	5322 130 41982	BC848B
	4822 130 31129	BB212
	5322 130 31928	BAS16
6068	4822 130 33004	BZX84-B5V6
6089	4822 130 33996	BZX84-C9V1
6091	4822 130 33523	HZ7A3 6V8
6092	4822 130 33523	HZ7A3 6V8
7060	4822 209 71001	SAA7210P/04
7061	4822 209 70422	IC UPP41416C-20
7062	4822 209 11157	SAA7220
7063	4822 209 72544	TDA 1541A/N2
7100	4822 209 71768	TDA 1542/N2
7101	4822 209 81349	MC 1458 P1 MTLA
7103	5322 209 10576	MC14053BCP
7104	5322 209 10576	MC14053BCP
7106	4822 209 72042	IC VOLTREG 78L05ALP
7106	4822 209 72042	VOLT.REG MC78L05 ALP

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

A B C D E F G H I J K L M N O

AUDIO

MOTOR PANEL MO16: ATSB 1A4, MUTEL 2A4, MUTER 3A4, AN/DIG 4A4, MCES 8A4, ANINH 9A3, MUSB 10A3, QRA 5A3, QCL 4A3, QDA 6A3, CRI 7A3, 1A3

1A1 AL, 2A1, 6A1, 5A1 AR

7060 SAA7210 DECODER A

EFM 2A3 → 2060 22n → 3061 22k → 24 FB; 25 HFI

HFD 8A3 → 3062 1k2 → 26 HFD

DATA SLICER; DEMOD TIMING; EFM DECODER; SUBCODE PROCESSOR; Q CHANNEL PROCESSOR

FIFO CONTROL & RAM INTERFACE; X-TAL CLOCK

SERVO PANEL S14: +14 → 3083 750 → 6066 BF550 → 23 IREF; +14 → 3084 1k8 → 3085 13k

PHASE & FREQUENCY DETECTOR; VCO

22 PD/OC → 3064 47 → 2063 3µ3 oh

27 CEFM

CONTROL; ADDRESS; DATA & FLAG

C1 INTERLEAVER CORRECTOR; C2 INTERLEAVER CORRECTOR DESCRAMBLER; ADAPTIVE FLAG PROCESSOR

1 SAMPLE INTER-POLATOR & SAMPLE /HOLD & MUTE CIRCUIT

X-TAL OSCILLATOR: X OUT 18, X IN 19

+5 → 5060 5µ3 → 40 Vdd; 2066 22n; 2064 47µ o t

20 Vss; 21 Vbb → 2065 47n

DRAM: A0 A1 A2 A3 A4 A5 A6 A7 RAS CAS R/W D1 D2 D3 D4 16; 18 Vss; 9 Vdd; 7061 UPD41416C-20

2268 22n; 3066 4R7 → +5; 2067 47µ o t

CDMODE 3A3; MCIN /A4 → MOTOR PANEL MO16

CRI, MCES, QDA, QCL, QRA, MUSB, ATSB, ANINH

+5 → 3146 4k7; 3937; +5 → 3067 4k7

+5 → 3073 10k; 3072 22k; 6062 BC848B; +5 → 3071 3k3 → MUSBA

+5 → 3150 4k7

3927; +5 → 3069 4k7; 6065 BC818-25

ALL COMPONENTS ARE CHIPCOMPONENTS UNLESS SPECI

7062 SAA7220 FILTER-B

SDAB 34 → 7 SDAB; SCAB 35 → 6 SCAB; WSAB 39 → 1 WSAB; CLAB 38 → 2 CLAB; DAAB 37 → 3 DAAB; EFAB 36 → 4 EFAB; DEEM 32

3090 0E; 6061 BC818-25

22 ATSB; 23 MUSB; 14 DOBM

MUTE 11 → +5 → 3086 4k7

8 SAMPLE INTERPOLATOR; 12 dB ATTENUATOR; SOFT MUTE CIRCUIT; 4 x UPSAMPLING DIGITAL FILTER

CHANNEL DEMULTI-PLEXER; INPUT STAGE

CHANNEL MULTI-PLEXER CIRCUIT; OUTPUT STAGE: DABD 15, CLBD 16, WSBD 18

DIGITAL OUTPUT ENCODER

X-TAL OSCILLATOR → TO CIRCUIT

X-IN 11 → 3929; 3070 150k; 5160 11.289600MHz; X-OUT 10 → 3930

Vss 12; TEST 13; Vdd 24 → 2070 22n; 3068; 2096 47µ o t; +5

+12 → 3096 10k; 3092 47k; 6064 BB212; 6090 BAS16; 2072 2µ2 oh; 2073 4n7; 3078 100k; 3077 100k; 6055 BAS16; 3075 2k2; 6089 BZX84 9V1; 3097 100k; 6088 BC848B; 6087 BC848B; 6068 BZX84 5V6; 5.1-12v

+5 → 3145 4k7; 3098 47k; 3933; 3076 180k

+5 → 3080 4k7; 2074 47µ o e; 2075 47n

27 D.A.C.; 28 OB/TC Vdd

MSB 6B 5B 4B 3B 2B 1B 0B LSB

2089 100n; 2088 100n; 2087 100n; 2086 100n; 2085 100n; 2084 100n; 2083 100n

LEFT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE

LEFT BIT SWITCHES

LEFT SHIFT REGISTER / LATCH

CURRENT REF SOURCE

RIGHT SHIFT REGISTER / LATCH

RIGHT BIT SWITCHES

RIGHT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE

MSB 6A 5A 4A 3A 2A 1A 0A LSB

2082 100n; 2081 100n; 2080 100n; 2079 100n; 2078 100n; 2077 100n; 2076 100n

OSCILLATOR: 16 → 2090 680p ← 17

AOL 25 → 3905; AOR 6 → 3906

Vdd1 26 → 2094 47; GNDA 5; GNDA; Vdd2 15 → 2095 47; GNDA; GNDD 14

3 DATA; 2 BCK; 4 SCK; 1 WS

INPUT STAGE; CHANNEL DEMULTI PLEXER

+5 → 3079 3k3

CS 18 981

ALL COMPONENTS ARE CHIPCOMPONENTS UNLESS SPECIFIED OTHERWISE

SUBPANEL

SERVO PANEL S13

CONNECTOR PANEL FO56

HEADPHONE PANEL

CONNECTOR PANEL FO56

HEADPHONE PANEL

TO F056

LEFT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE

LEFT BIT SWITCHES

LEFT SHIFT REGISTER / LATCH

INPUT STAGE

CHANNEL DEMULTI PLEXER

CURRENT REF. SOURCE

RIGHT SHIFT REGISTER / LATCH

RIGHT BIT SWITCHES

OSCILLATOR

RIGHT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE

7103 3C MC14053BCP

7104 3C MC14053BCP

7103 3A MC14053BCP

7104 3A MC14053BCP

7103 3B MC14053BCP

7104 3B MC14053BCP

7100 6A TDA1542

7100 6B TDA1542

7100 6C TDA1542

7100 6D TDA1542

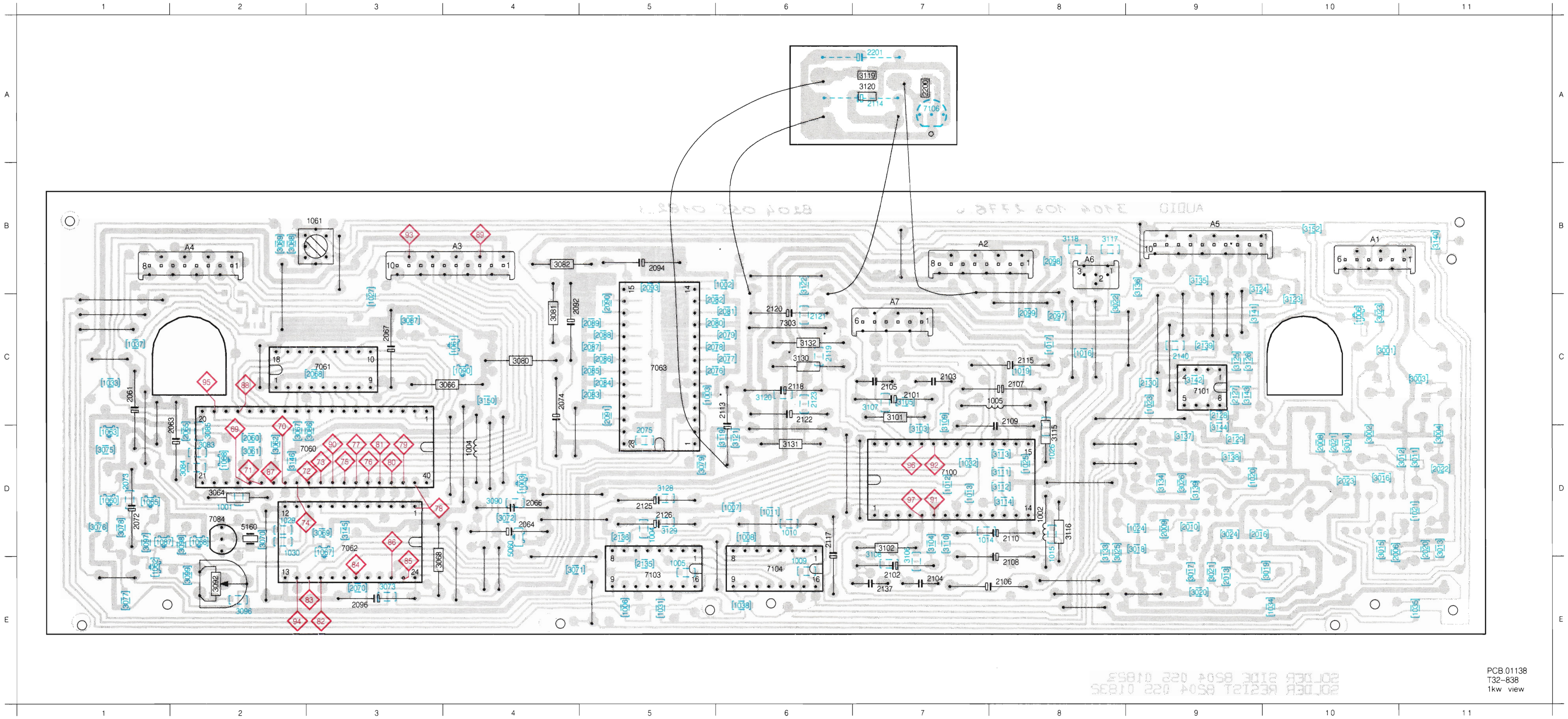
7100 6E TDA1542

7101 MC1458P1

PRS.03157
T10-836

PRINT LAY-OUT COMP-SIDE WITH SMALL SUB. PANEL

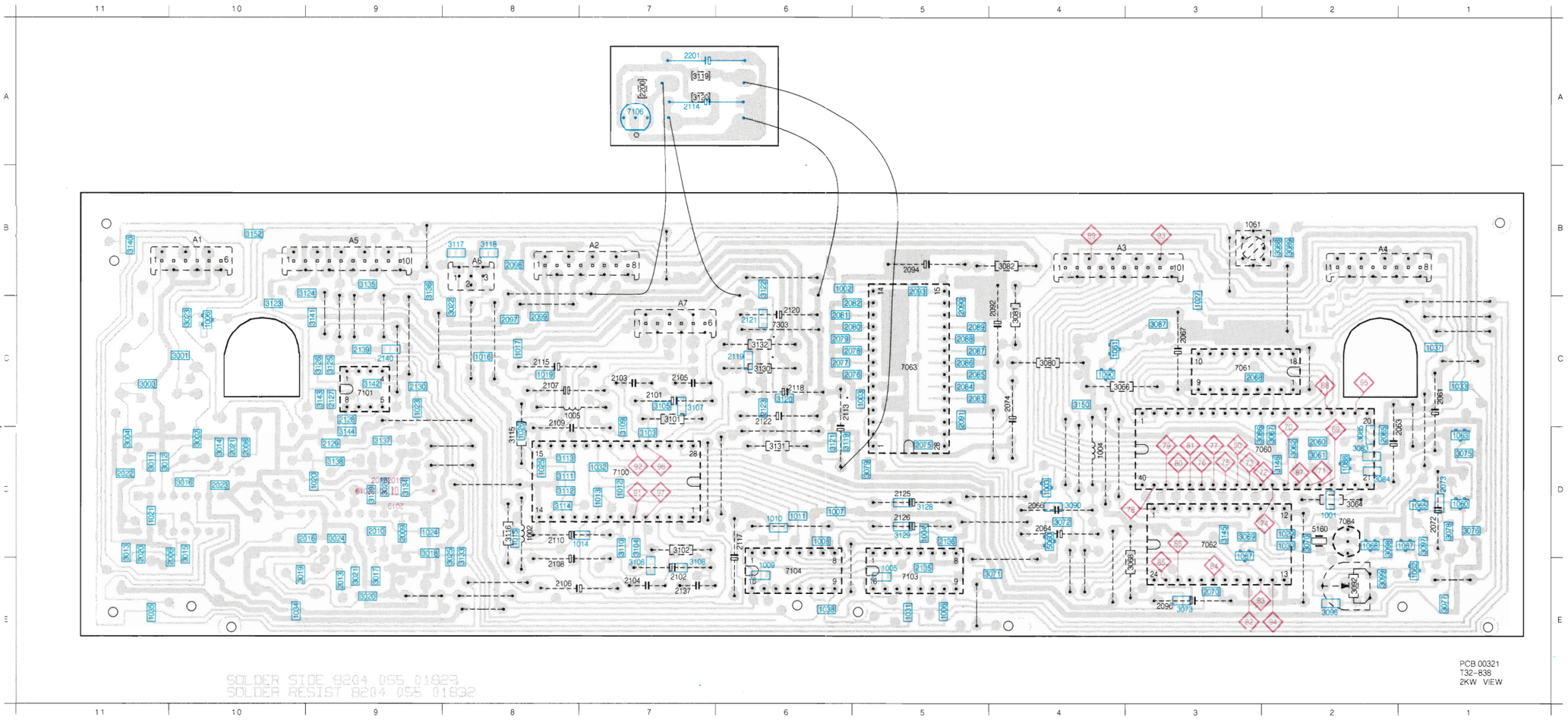
1001 D 2	1006 E 5	1014 D 7	1025 D 8	1035 E11	1067 D 3	2013 E 9	2064 D 4	2075 D 5	2084 C 5	2093 B 5	2104 E 7	2115 C 8	2126 D 5	2140 C 9	3013 D11	3022 C 8	3067 D 2	3077 E 1	3086 D 3	3099 E 2	3109 C 7	3118 B 8	3125 C 9	3135 B 9	3144 D 9	7062 D 3
1002 B 6	1006 C10	1015 D 8	1026 D 8	1037 C 1	1068 D 2	2016 D 9	2065 D 2	2076 C 6	2085 C 5	2094 B 5	2105 C 7	2117 D 6	2127 C 9	2200 A 7	3014 D10	3023 C10	3068 E 3	3078 D 1	3087 C 3	3101 C 7	3110 D 7	3119 D 6	3126 C 9	3136 B 9	3145 D 3	7063 C 5
1002 D 8	1007 D 6	1016 C 8	1027 C 3	1038 E 6	1087 D 1	2020 D11	2066 D 4	2077 C 6	2086 C 5	2096 E 3	2106 E 8	2118 C 6	2128 C 9	2201 A 7	3015 D10	3024 D 9	3069 D 3	3079 D 5	3088 B 2	3102 D 7	3111 D 8	3119 A 7	3128 D 5	3137 D 9	3146 D 2	7084 D 2
1003 D 4	1008 D 6	1017 C 8	1029 D 2	1060 D 1	1088 D 2	2021 D10	2067 C 3	2078 C 6	2087 C 5	2097 C 8	2107 C 8	2119 C 6	2129 D 9	3001 C10	3016 D10	3025 D 8	3070 D 2	3080 C 4	3089 B 2	3103 D 7	3112 D 8	3120 C 6	3129 D 5	3138 D 9	3150 C 4	7100 D 7
1003 C 5	1009 E 6	1019 C 8	1030 D 2	1061 C 4	1090 C 4	2022 D11	2068 C 3	2079 C 6	2088 C 5	2098 B 8	2108 E 8	2120 C 6	2130 C 9	3002 D10	3017 E 9	3026 D 9	3071 E 4	3081 C 4	3090 D 4	3104 D 7	3113 D 8	3120 A 7	3130 C 6	3139 D 9	3152 B10	7101 C 9
1004 D 5	1010 D 6	1020 D 9	1031 E 5	1061 B 3	2006 D10	2023 D10	2070 E 3	2080 C 6	2089 C 5	2099 C 8	2109 C 8	2121 C 6	2135 E 5	3003 C11	3018 D 9	3061 D 2	3072 D 4	3082 B 4	3092 E 2	3105 C 7	3114 D 8	3121 D 6	3131 D 6	3140 B11	5060 D 4	7103 E 5
1004 D 4	1011 D 6	1021 D11	1032 D 7	1062 E 1	2008 D10	2060 D 2	2072 D 1	2081 C 6	2090 C 5	2101 C 7	2110 D 8	2122 C 6	2136 D 5	3004 D11	3019 E10	3062 D 2	3073 E 3	3083 D 2	3096 E 2	3106 D 7	3115 D 8	3122 C 6	3132 C 6	3141 C 9	5160 D 2	7104 E 6
1005 E 5	1012 D 7	1023 C 9	1033 C 1	1063 D 1	2009 D 9	2061 C 1	2073 D 1	2082 C 6	2091 C 5	2102 E 7	2113 C 6	2123 C 6	2137 E 7	3011 D11	3020 E 9	3064 D 2	3075 D 1	3084 D 2	3097 D 1	3107 C 7	3116 D 8	3123 C10	3133 D 8	3142 C 9	7060 D 3	7106 A 7
1005 C 8	1013 D 7	1024 D 9	1034 E10	1065 D 1	2010 D 9	2063 C 2	2074 C 4	2083 C 5	2092 C 4	2103 C 7	2114 A 7	2125 D 5	2139 C 9	3012 D11	3021 E 9	3066 C 4	3076 D 1	3085 D 2	3098 D 2	3108 D 7	3117 B 8	3124 B 9	3134 D 9	3143 C 9	7061 C 3	7303 C 6



PRINT LAY-OUT CHIP-SIDE SMALL SUB. PANEL

1001	D 2	1006	E 5	1014	D 8	1025	D 8	1035	E11	1067	D 3	2013	E 9	2064	D 4	2075	D 5	2084	C 5	2093	B 5	2104	E 7	2115	C 8	2126	D 5	2140	C 9	3013	D11
1002	B 6	1006	C10	1015	D 8	1026	D 8	1037	C 1	1068	D 2	2016	D10	2065	D 2	2076	C 6	2085	C 5	2094	B 5	2105	C 7	2117	D 6	2127	C 9	2200	A 7	3014	D10
1002	D 8	1007	D 6	1016	C 8	1027	C 3	1038	E 6	1087	D 2	2020	D11	2066	D 4	2077	C 6	2086	C 5	2096	E 3	2106	E 8	2118	C 6	2128	C 9	2201	A 7	3015	D10
1003	D 4	1008	D 6	1017	C 8	1029	D 2	1060	D 1	1088	D 2	2021	D10	2067	C 3	2078	C 6	2087	C 5	2097	C 8	2107	C 8	2119	C 6	2129	D 9	3001	C11	3016	D11
1003	C 5	1009	E 6	1019	C 8	1030	D 2	1061	C 4	1090	C 4	2022	D11	2068	C 3	2079	C 6	2088	C 5	2098	B 8	2108	E 8	2120	C 6	2130	C 9	3002	D10	3017	E 9
1004	D 5	1010	D 6	1020	D 9	1031	E 5	1061	B 3	2006	D10	2023	D10	2070	E 3	2080	C 6	2089	C 5	2099	C 8	2109	C 8	2121	C 6	2135	E 5	3003	C11	3018	D 9
1004	D 4	1011	D 6	1021	D11	1032	D 7	1062	E 1	2008	D10	2060	D 2	2072	D 1	2081	C 6	2090	C 5	2101	C 7	2110	D 8	2122	C 6	2136	D 5	3004	D11	3019	E 9
1005	E 5	1012	D 7	1023	C 9	1033	C 1	1063	D 1	2009	D 9	2061	C 1	2073	D 1	2082	C 6	2091	C 5	2102	E 7	2113	C 6	2123	C 6	2137	E 7	3011	D11	3020	E 9
1005	C 8	1013	D 7	1024	D 9	1034	E10	1065	D 1	2010	D 9	2063	C 1	2074	C 4	2083	C 5	2092	C 4	2103	C 7	2114	A 7	2125	D 5	2139	C 9	3012	D10	3021	E 9

3022	C 8	3067	D 2	3077	E 1	3086	D 2	3099	E 2	3109	C 7	3118	B 8	3125	C 9	3135	B 9	3144	D 9	7062	D 3										
3023	C10	3068	E 3	3078	D 1	3087	C 3	3101	C 7	3110	D 7	3119	D 5	3126	C 9	3136	B 9	3145	D 3	7063	C 5										
3024	D 9	3069	D 3	3079	D 5	3088	B 2	3102	D 7	3111	D 8	3119	A 7	3128	D 5	3137	D 9	3146	D 2	7084	D 2										
3025	D 8	3070	D 2	3080	C 4	3089	B 2	3103	D 7	3112	D 8	3120	C 6	3129	D 5	3138	D 9	3150	C 4	7100	D 7										
3026	D 9	3071	E 5	3081	C 4	3090	D 4	3104	D 7	3113	D 8	3120	A 7	3130	C 6	3139	D 9	3152	B10	7101	C 9										
3061	D 2	3072	D 4	3082	B 5	3092	E 2	3105	C 7	3114	D 8	3121	D 6	3131	D 6	3140	B11	5060	D 4	7103	E 5										
3062	D 2	3073	E 3	3083	D 2	3096	E 2	3106	E 7	3115	D 8	3122	B 6	3132	C 6	3141	C 9	5160	D 2	7104	E 6										
3064	D 2	3075	D 1	3084	D 2	3097	D 1	3107	C 7	3116	D 8	3123	C10	3133	D 8	3142	C 9	7060	D 3	7106	A 7										
3066	C 4	3076	D 1	3085	D 2	3098	D 2	3108	E 7	3117	B 9	3124	B10	3134	D 9	3143	C 9	7061	C 3	7303	C 6										



OVERL BEH BIJ PCB.00321

OVERL BEH BIJ PCB.00321

MEASUREMENTS & ADJUSTMENTS

AUDIO ELECTRICAL MEASUREMENTS AND ADJUSTMENTS

SIGNAL	MODE	◇			REMARKS
HF	TESTDISC 5 PLAY	69		EYE PATTERN	SEE DRAWING 37017B8
CRI	TESTDISC 5A SCAN REV,FWD	70			SEE DRAWING MDA.01552
HFD	TESTDISC 5A TRACK 15,PLAY	71		PULSES LOW	SEE DRAWING MDA.00240
QRA	TESTDISC 5A PLAY	72			SEE DRAWING MDA.00453
QCL	TESTDISC 5A PLAY	73			
QDA	TESTDISC 5A PLAY	74			
SWAB	TESTDISC 5A PLAY	75			SEE DRAWING MDA.00239
SCAB	TESTDISC 5A PLAY	76			
SDAB	TESTDISC 5A PLAY	77			
WSAB	DISC PLAY	78			SEE DRAWING 38847c12
CLAB	DISC PLAY	79			
DAAB	DISC PLAY	80			
EFAB	TESTDISC 5A	81			WHEN THE DISC IS SLOWLY BRAKED BY HAND
CLBD	DISC PLAY	82			SEE DRAWING 38848C12
DABD	DISC PLAY	83			
WSBD	DISC PLAY	84			
$\overline{\text{MUSB}}$	DISC PAUZE OR NEXT OR PREVIOUS	85		LOW	
$\overline{\text{ATSB}}$	DISC SCAN	86		LOW	
CEFM	TESTDISC 5A PLAY	87		4.32MHz	
MC	CD PLAY	88			SEE DRAWING 38849A12
MC IN	CDV VIDEO TRACK PLAY	89			DC LEVEL VARYING ROUND 0 VOLT
DEEM	TESTDISC 5A TRACK 14: PLAY TRACK 15: PLAY	90		LOW HIGH	
TEST POINT 91	TESTDISC 5A TRACK 14	91		NO SIGNAL	
TEST POINT 91	TESTDISC 5A TRACK 15	91		LF SIGNAL	
TEST POINT 92	TESTDISC 5A TRACK 14	92		NO SIGNAL	
TEST POINT 92	TESTDISC 5A TRACK 15	92		LF SIGNAL	
ANINH	CD ROM DISC PLAY	93	0.6 VOLT DC		
DOBM	TESTDISC 5A PLAY	94			SEE DRAWING MDA.00238
X-TAL	TESTDISC 5A PLAY CDVDISC VIDEO TRACK	95		11.28MHz VARYING	
OUTPUT OF OPAMP	DISC PLAY	96		LF SIGNAL	LEFT CHANNEL
OUTPUT OF OPAMP	DISC PLAY	97		LF SIGNAL	RIGHT CHANNEL

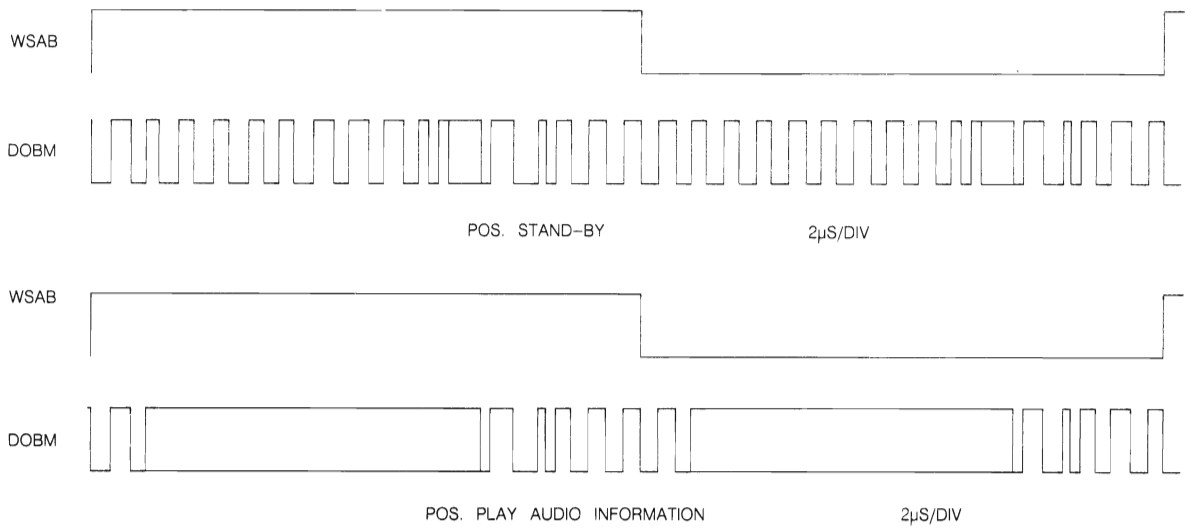
ADJUSTMENTS SYSTEMCLOCK

STEP	SIGNAL	MODE	◇			REMARKS
1	XSYS	POWER ON	95	R3092	11.289600 ±300Hz	

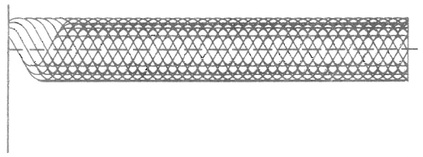
MDA.01551
T02/836

POSITION PLAYER	POWER ON	PLAY	SCAN REV FWD
CRI	"LOW"	"HIGH"	

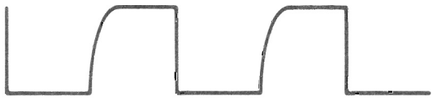
MDA.01552
T02/836



MDA.00238
T07/733



37 017 B8



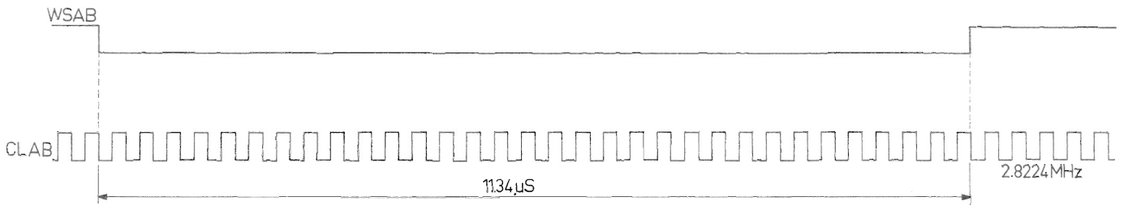
POSITION: STAND BY

POSITION: PLAY (BEGINNING)

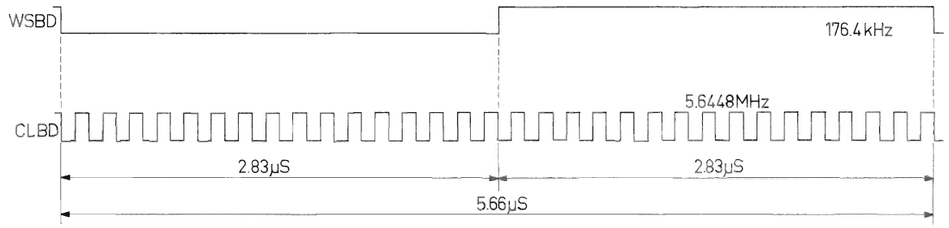
POSITION: PLAY (NORMAL)

38 849 A12

MDA 00240
T07-804



38 847 C12



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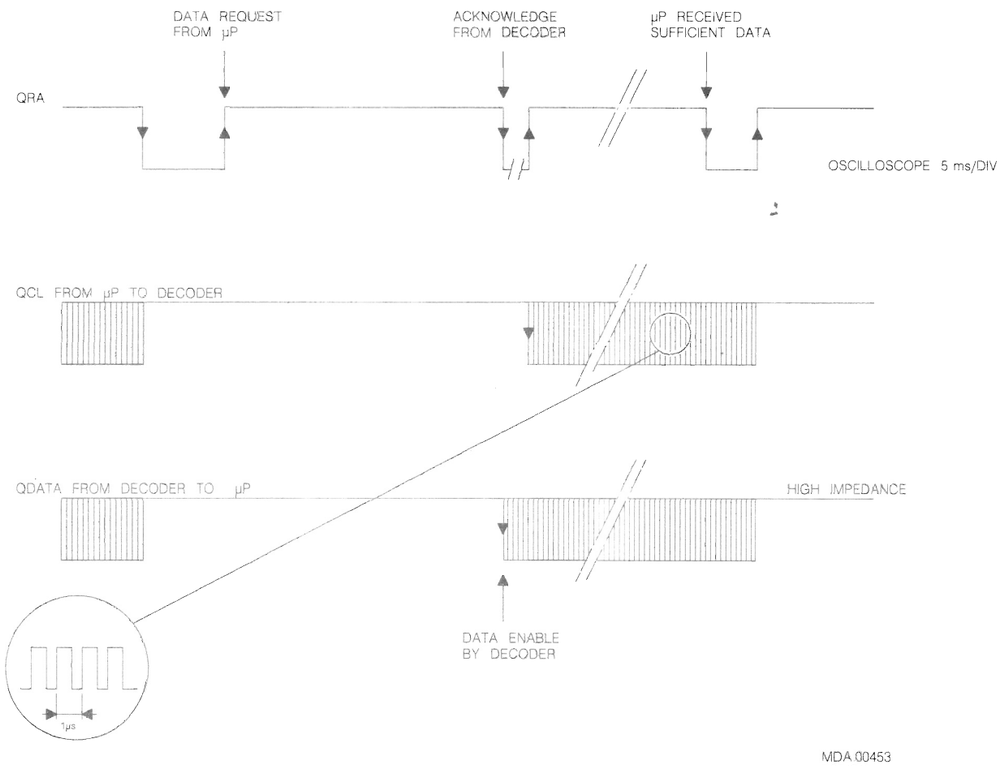

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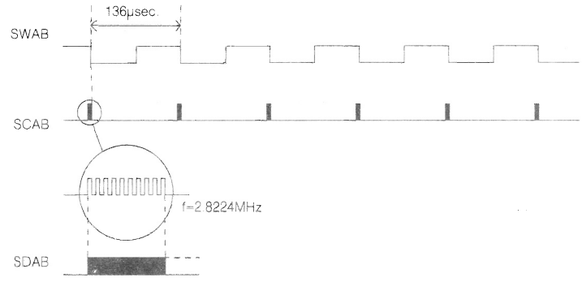
T27/649



MDA 00239
T12/638

CD450

PRINT LAY-OUT COMP-SIDE WITH LARGE SUB. PANEL

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1002 D 6 1007 E 6 1017 D 8 1030 F 2 1061 C 3 2008 E10 2061 D 1 2074 D 4 2084 D 5 2094 D 5 2106 F 8 2118 D 6 2129 E 9 3002 E10 3018 E 9 3062 E 2 3075 E 1 3085 E 2 3099 F 2 3110 E 7 3119 C 6 3129 E 5 3137 E 9 3150 D 4 7061 D 3
1002 E 8 1008 E 6 1019 D 8 1031 F 5 1062 F 1 2009 E 9 2063 E 2 2075 E 5 2085 D 5 2096 F 3 2107 D 8 2119 D 6 2130 D 9 3003 D11 3019 F10 3064 E 2 3076 E 1 3086 E 3 3101 E 7 3111 E 8 3120 D 6 3130 D 6 3138 E 9 3152 C10 7062 E 3
1003 E 4 1009 F 6 1020 E 9 1032 E 7 1063 E 1 2010 E 9 2064 E 4 2076 D 6 2086 D 5 2097 D 8 2108 F 8 2120 D 6 2135 F 5 3004 E11 3020 F 9 3066 D 4 3077 F 1 3087 D 3 3102 E 7 3112 E 8 3120 C 6 3130 B 6 3139 E 9 3153 A 6 7063 D 5
1003 D 5 1010 E 6 1021 E11 1033 D 1 1065 E 1 2013 F 9 2065 E 2 2077 D 6 2087 D 5 2098 D 8 2109 E 8 2121 D 6 2136 E 5 3011 E11 3021 F 9 3067 E 2 3078 E 1 3088 C 2 3103 E 7 3113 E 8 3121 E 6 3131 E 6 3140 C11 3154 A 6 7084 E 2
1004 E 5 1011 E 6 1023 D 9 1034 F10 1067 F 3 2016 E10 2066 E 4 2078 D 6 2088 D 5 2099 D 8 2110 E 8 2122 E 6 2137 F 7 3012 E11 3022 D 8 3068 F 4 3079 E 5 3089 C 2 3104 E 7 3114 E 8 3122 D 6 3132 D 6 3141 D10 3155 A 6 7100 E 7
1004 E 4 1012 E 7 1024 E 9 1035 F11 1068 E 2 2020 E11 2067 D 3 2079 D 6 2089 D 5 2101 D 7 2113 E 6 2123 D 6 2139 D 9 3013 E11 3023 D10 3069 E 3 3080 D 4 3090 E 4 3105 D 7 3115 E 8 3123 D10 3132 B 6 3142 D 9 5060 E 4 7101 D 9
1005 F 5 1013 E 7 1025 E 8 1037 D 1 1087 E 2 2021 E10 2068 D 3 2080 D 6 2090 D 5 2102 F 7 2113 B 5 2125 E 5 2140 D 9 3014 E10 3024 E 9 3070 E 2 3081 D 4 3092 F 2 3106 F 7 3116 E 8 3124 D10 3133 E 8 3143 D 9 5160 E 2 7103 F 5
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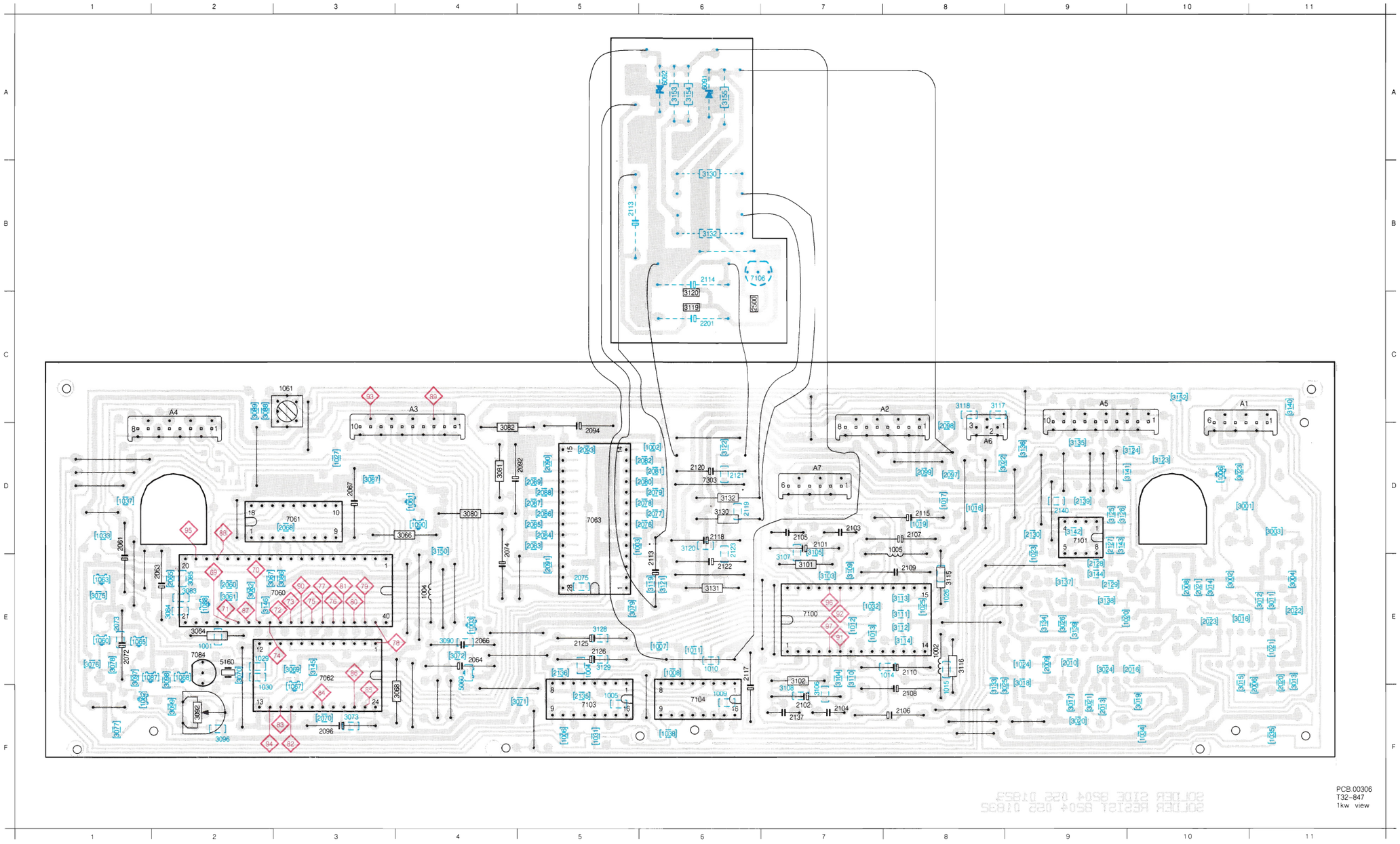
1006 F 5 1015 F 8 1027 D 3 1060 E 1 1090 D 4 2023 E10 2072 E 1 2082 D 6 2092 D 5 2104 F 7 2115 D 8 2127 D 9 2500 C 6 3016 E10 3026 E 9 3072 E 4 3083 E 2 3097 E 1 3108 F 7 3118 C 8 3126 D 9 3135 D 9 3145 E 3 6092 A 6 7106 B 7



PRINT LAY-OUT CHIP-SIDE WITH LARGE SUB. PANEL

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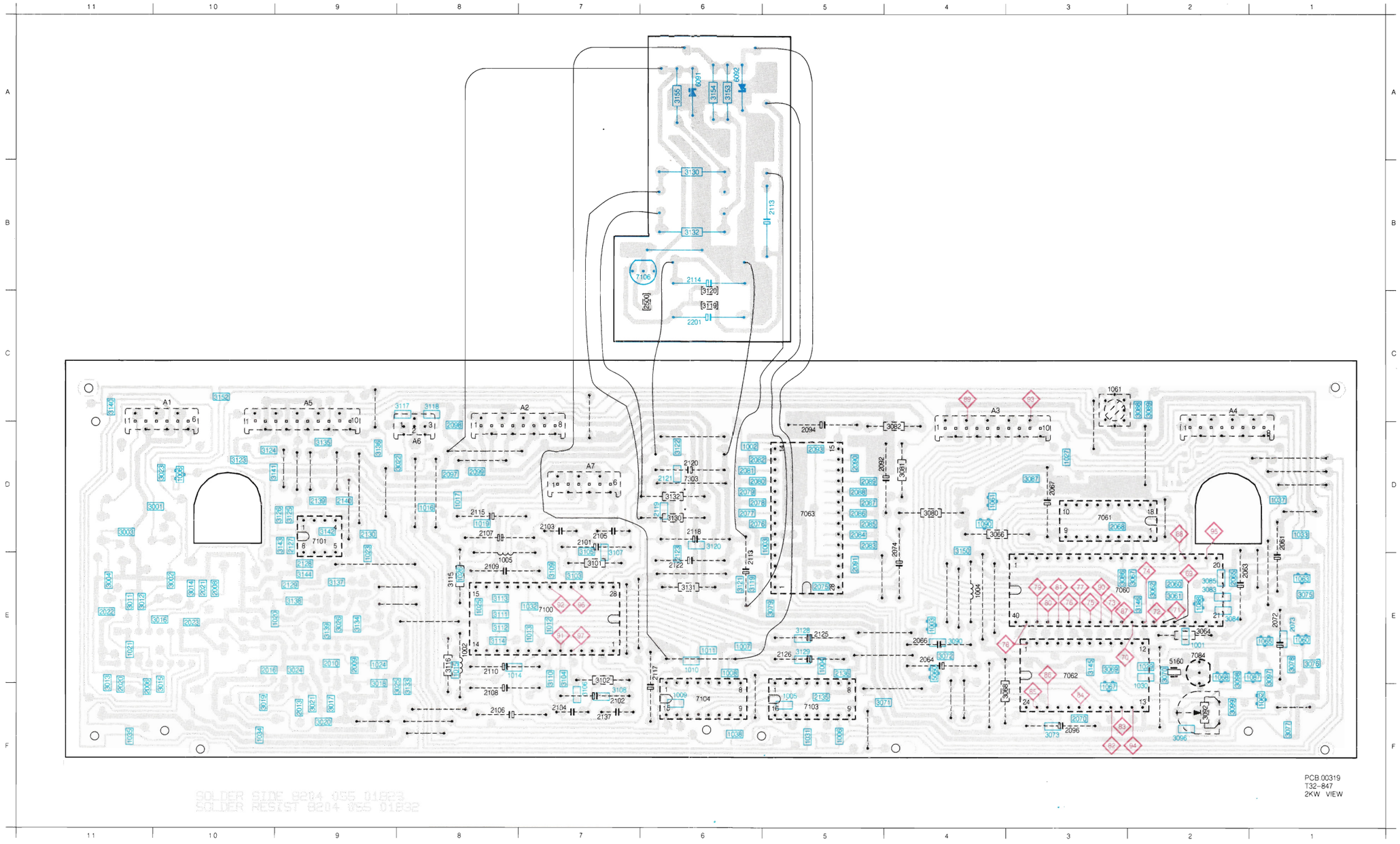
1002	D 6	1007	E 6	1017	D 8	1030	F 3	1061	C 3	2008	E10	2061	D 1	2074	D 4	2084	D 5	2094	D 5	2106	F 8	2118	D 6	2129	E10	3002	E10	3018	F 9	3062	E 2	3075	E 1	3085	E 2	3099	F 2	3110	E 7	3119	C 6	3129	E 5	3137	E 9	3150	D 4	7061	D 3		
1002	E 8	1008	E 6	1019	D 8	1031	F 5	1062	F 1	2009	E 9	2063	E 1	2075	E 5	2085	D 5	2096	F 3	2107	D 8	2119	D 6	2130	D 9	3003	D11	3019	F10	3064	E 2	3076	E 1	3086	E 3	3101	E 7	3111	E 8	3120	D 6	3130	D 6	3138	E 9	3152	C10	7062	E 3		
1003	E 4	1009	F 6	1020	E 9	1032	E 8	1063	E 1	2010	E 9	2064	E 4	2076	D 6	2086	D 5	2097	D 8	2108	F 8	2120	D 6	2135	F 5	3004	E11	3020	F 9	3066	D 4	3077	F 1	3087	D 3	3102	E 7	3112	E 8	3120	C 6	3130	B 6	3139	E 9	3153	A 6	7063	D 5		
1003	D 5	1010	E 6	1021	E11	1033	D 1	1065	E 2	2013	F 9	2065	E 2	2077	D 6	2087	D 5	2098	D 8	2109	E 8	2121	D 6	2136	E 5	3011	E11	3021	F 9	3067	E 2	3078	E 1	3088	C 2	3103	E 7	3113	E 8	3121	E 6	3131	E 6	3140	C11	3154	A 6	7084	E 2		
1004	E 5	1011	E 6	1023	D 9	1034	F10	1067	F 3	2016	E10	2066	E 4	2078	D 6	2088	D 5	2099	D 8	2110	E 8	2122	E 6	2137	F 7	3012	E11	3022	D 8	3068	F 3	3079	E 5	3089	C 2	3104	E 7	3114	E 8	3122	D 6	3132	D 6	3141	D 9	3155	A 6	7100	E 7		
1004	E 4	1012	E 7	1024	E 9	1035	F11	1068	E 2	2020	E11	2067	D 3	2079	D 6	2089	D 5	2101	D 7	2113	E 6	2123	D 6	2139	D 9	3013	E11	3023	D10	3069	E 3	3080	D 4	3090	E 4	3105	D 7	3115	E 8	3123	D10	3132	B 6	3142	D 9	5060	E 4	7101	D 9		
1005	F 5	1013	E 7	1025	E 8	1037	D 1	1087	E 2	2021	E10	2068	D 3	2080	D 6	2090	D 5	2102	F 7	2113	B 5	2125	E 5	2140	D 9	3014	E10	3024	E 9	3070	E 2	3081	D 4	3092	F 2	3106	F 7	3116	E 8	3124	D10	3133	F 8	3143	D 9	5160	E 2	7103	F 5		
1005	E 8	1014	E 8	1026	E 8	1038	F 6	1088	E 2	2022	E11	2070	F 3	2081	D 6	2091	E 5	2103	D 7	2114	B 6	2126	E 5	2201	C 6	3015	E10	3025	F 8	3071	F 5	3082	D 5	3096	F 2	3107	E 7	3117	C 9	3125	D 9	3134	E 9	3144	E 9	6091	A 6	7104	F 6		
1006	F 5	1015	E 8	1027	D 3	1060	E 1	1090	D 4	2023	E10	2072	E 1	2082	D 6	2092	D 4	2104	F 7	2115	D 8	2127	D 9	2500	C 6	3016	E11	3026	E 9	3072	E 4	3083	E 2	3097	E 1	3108	F 7	3118	C 8	3126	D 9	3135	D 9	3145	E 3	6092	A 6	7106	B 7		



CIRCUIT DIAGRAM WITH LARGE SUB. PANEL

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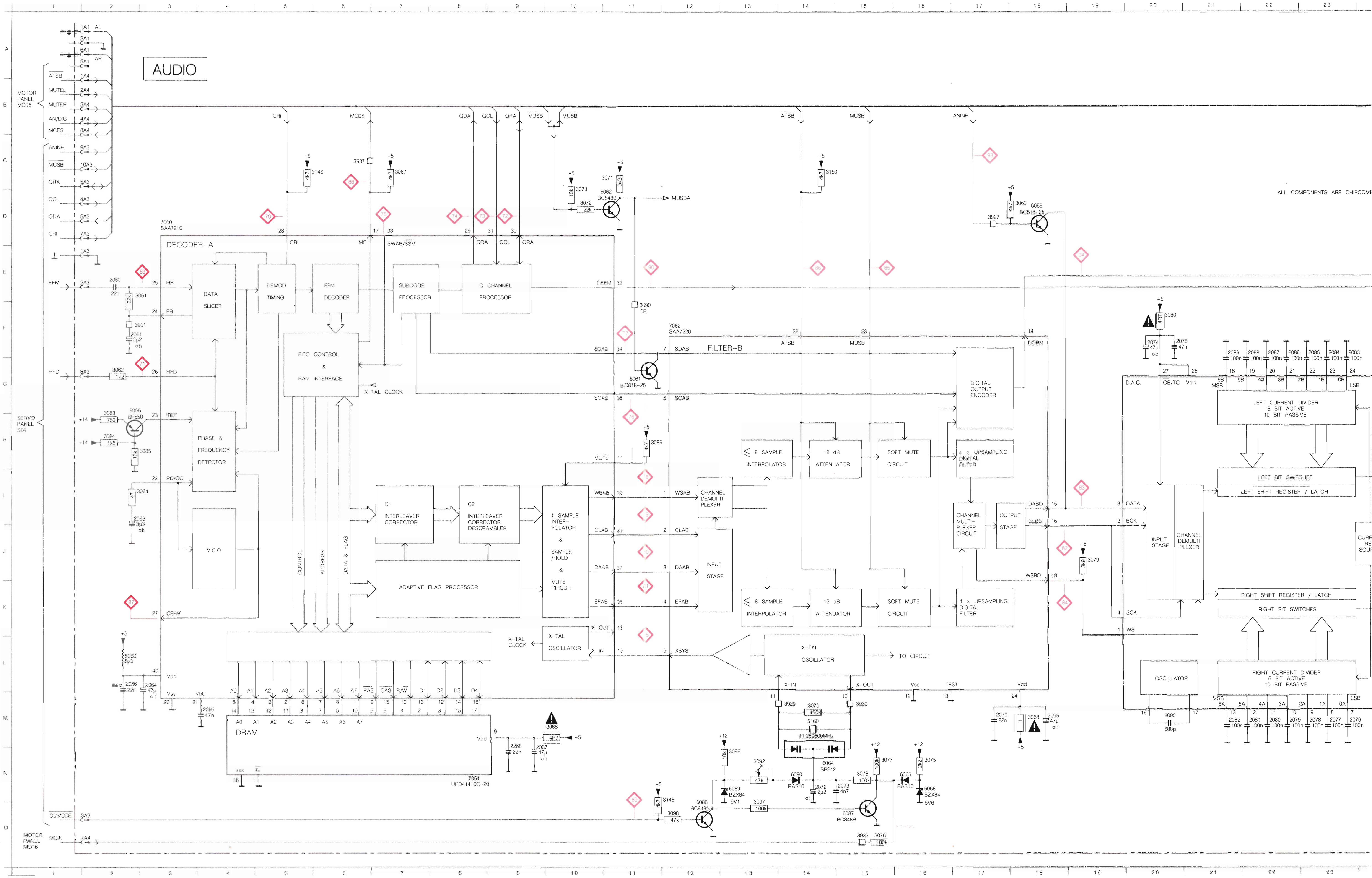
2001	C31	2063	I 3	2067	N 9	2074	F20	2078	M23	2082	M21	2086	F22	2090	M20	2094	J25	2099	B37	2104	N26
2002	C31	2064	L 3	2070	M17	2075	F21	2079	M22	2083	F23	2087	F22	2091	I25	2096	M18	2101	I26	2105	J26
2060	E 2	2065	M 4	2072	N14	2076	M23	2080	M22	2084	F23	2088	F22	2092	I25	2097	C33	2102	N26	2106	L35

2107	H28	2111	H36	2114	B34	2119	F27	2123	F26	2128	K37	2136	M32	3025	D31	3064	I 3	3069	D18	3073	C10
2108	M28	2112	M36	2115	G35	2120	F30	2125	G30	2129	I38	2137	N26	3026	D31	3066	M10	3070	M14	3075	N16
2109	H29	2113	L25	2117	M34	2121	F29	2126	L30	2130	J37	2201	I26	3061	E 3	3067	C 7	3071	C11	3076	O15
2110	M29	2113	B34	2118	F28	2122	F27	2127	J37	2135	G33	2268	M 9	3062	G 2	3068	M18	3072	D10	3077	N15

3078	N15	3082	J25	3086	H11	3092	N13	3101	I26	3105	G28	3110	L28	3114	N35	3118	M37	3123	G37	3128	H30
3079	J19	3083	G 2	3088	E37	3096	N13	3102	M26	3106	L28	3111	I34	3115	H36	3119	A34	3124	L37	3129	M30
3080	F20	3084	H 2	3089	E36	3097	N13	3103	I26	3108	N26	3112	N34	3116	M36	3120	B34	3125	J38	3130	A36
3081	H25	3085	H 3	3090	F11	3098	O12	3104	N26	3109	G28	3113	I35	3117	I38	3121	L26	3126	K38	3131	F27



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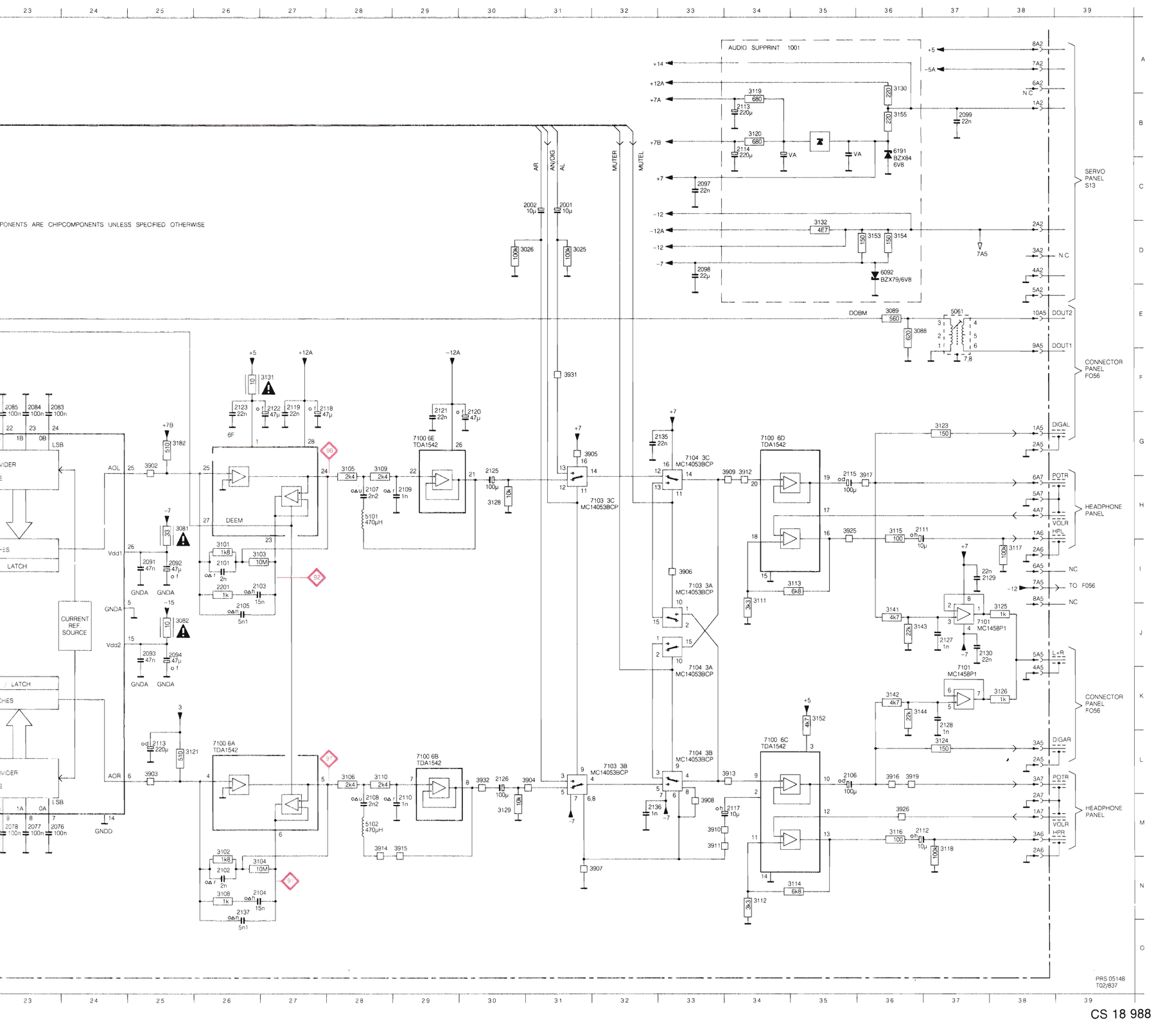
L37	3129	M30	3141	J36	3145	N12	3153	D36	3901	F 3	3905	G31	3909	G34	3913	L34	3917	G36	3927	D17	3932	L30	5061	E37	6061	G11	6065	N16	6088	O12	6191	B36	7100	G34	7100	L34	7104	G33
J38	3130	A36	3142	K36	3146	C 6	3154	D36	3902	G25	3906	I 33	3910	M33	3914	M28	3919	L36	3929	M14	3933	O15	5101	H28	6062	D11	6066	G 2	6089	N13	7060	D 3	7100	G29	7103	H32	7104	K33
K38	3131	F27	3143	J37	3150	C14	3155	B36	3903	L25	3907	N32	3911	M33	3915	M29	3925	H35	3930	M15	3937	C 6	5102	M28	6064	N14	6068	N16	6090	N14	7061	N 8	7100	L29	7103	I 33	7104	L33



CS 18 988

AUDIO

MOTOR PANEL MO16

SERVO PANEL S14

7060 SAA7210 DECODER-A

7062 SAA7220 FILTER-B

7061 UPD41416C-20 DRAM

6066 BF550 | 6061 BC848B | 6062 BC848B | 6065 BC818-25 | 6064 BB212 | 6087 BC848B | 6088 BC848B | 6089 BZX84 9V1 | 6090 BAS16 | 6065 BAS16 | 6068 BZX84 5V6

DATA SLICER | DEMOD TIMING | EFM DECODER | SUBCODE PROCESSOR | Q CHANNEL PROCESSOR | FIFO CONTROL & RAM INTERFACE | X-TAL CLOCK | PHASE & FREQUENCY DETECTOR | VCO | C1 INTERLEAVER CORRECTOR | C2 INTERLEAVER CORRECTOR DESCRAMBLER | ADAPTIVE FLAG PROCESSOR | 1 SAMPLE INTER-POLATOR & SAMPLE /HOLD & MUTE CIRCUIT | CHANNEL DEMULTI-PLEXER | INPUT STAGE | X-TAL OSCILLATOR | 8 SAMPLE INTERPOLATOR | 12 dB ATTENUATOR | SOFT MUTE CIRCUIT | 4 x UPSAMPLING DIGITAL FILTER | DIGITAL OUTPUT ENCODER | CHANNEL MULTI-PLEXER CIRCUIT | OUTPUT STAGE

D.A.C. | LEFT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE | LEFT BIT SWITCHES | LEFT SHIFT REGISTER / LATCH | RIGHT SHIFT REGISTER / LATCH | RIGHT BIT SWITCHES | RIGHT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE | CURRENT REF SOURCE | OSCILLATOR | INPUT STAGE | CHANNEL DEMULTI PLEXER

ALL COMPONENTS ARE CHIPCOMPONENTS UNLESS SP

CS 18 989

ALL COMPONENTS ARE CHIPCOMPONENTS UNLESS SPECIFIED OTHERWISE

AUDIO SUBPRINT 1501

SERVO PANEL S13

CONNECTOR PANEL FO56

CONNECTOR PANEL FO56

D.A.C.

LEFT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE

LEFT BIT SWITCHES

LEFT SHIFT REGISTER / LATCH

INPUT STAGE

CHANNEL DEMULTI PLEXER

CURRENT REF SOURCE

RIGHT SHIFT REGISTER / LATCH

RIGHT BIT SWITCHES

OSCILLATOR

RIGHT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE

PRS 05150
T02/837

PRINT LAY-OUT COMP-SIDE CDV988

1001 E 2	1006 D10	1016 D 8	1029 E 2	1061 D 4	2006 E11	2060 E 2	2073 E 1	2083 D 5	2093 D 5	2105 D 7	2117 E 6	2128 E 9
1002 D 6	1007 E 6	1017 D 8	1030 F 2	1061 C 3	2008 E10	2061 D 1	2074 D 4	2084 D 5	2094 D 5	2106 F 8	2118 D 6	2129 E 9
1002 E 8	1008 E 6	1019 D 8	1031 F 5	1062 F 1	2009 E 9	2063 E 2	2075 E 5	2085 D 5	2096 F 3	2107 D 8	2119 D 6	2130 D 9
1003 E 4	1009 F 6	1020 E 9	1032 E 7	1063 E 1	2010 E 9	2064 E 4	2076 D 6	2086 D 5	2097 D 8	2108 F 8	2120 D 6	2135 F 5
1003 D 5	1010 E 6	1021 E11	1033 D 1	1065 E 1	2013 F 9	2065 E 2	2077 D 6	2087 D 5	2098 D 8	2109 E 8	2121 D 6	2136 E 5
1004 E 5	1011 E 6	1023 D 9	1034 F10	1067 F 3	2016 E10	2066 E 4	2078 D 6	2088 D 5	2099 D 8	2110 E 8	2122 E 6	2137 F 7
1004 E 4	1012 E 7	1024 E 9	1035 F11	1068 E 2	2020 E11	2067 D 3	2079 D 6	2089 D 5	2101 D 7	2113 E 6	2123 D 6	2139 D 9
1005 F 5	1013 E 7	1025 E 8	1037 D 1	1087 E 2	2021 E10	2068 D 3	2080 D 6	2090 D 5	2102 F 7	2113 B 5	2125 E 5	2140 D 9
1005 D 8	1014 E 8	1026 E 8	1038 F 6	1088 E 2	2022 E11	2070 F 3	2081 D 6	2091 E 5	2103 D 7	2114 B 6	2126 E 5	2201 C 6
1006 F 5	1015 F 8	1027 D 3	1060 E 1	1090 D 4	2023 E10	2072 E 1	2082 D 6	2092 D 5	2104 F 7	2115 D 8	2127 D 9	2500 C 6

3001 D10	3017 F 9	3061 E 2	3073 F 3	3084 E 2	3098 E 2	3109 E 7	3119 E 6	3128 E 5	3136 D 9	3146 E 2	7060 E 3	7303 D 6
3002 E10	3018 E 9	3062 E 2	3075 E 1	3085 E 2	3099 F 2	3110 E 7	3119 C 6	3129 E 5	3137 E 9	3150 D 4	7061 D 3	
3003 D11	3019 F10	3064 E 2	3076 E 1	3086 E 3	3101 E 7	3111 E 8	3120 D 6	3130 D 6	3138 E 9	3152 C10	7062 E 3	
3004 E11	3020 F 9	3066 D 4	3077 F 1	3087 D 3	3102 E 7	3112 E 8	3120 C 6	3130 B 6	3139 E 9	3153 A 6	7063 D 5	
3011 E11	3021 F 9	3067 E 2	3078 E 1	3088 C 2	3103 E 7	3113 E 8	3121 E 6	3131 E 6	3140 C11	3154 A 6	7084 E 2	
3012 E11	3022 D 8	3068 F 4	3079 E 5	3089 C 2	3104 E 7	3114 E 8	3122 D 6	3132 D 6	3141 D10	3155 A 6	7100 E 7	
3013 E11	3023 D10	3069 E 3	3080 D 4	3090 E 4	3105 D 7	3115 E 8	3123 D10	3132 B 6	3142 D 9	5060 E 4	7101 D 9	
3014 E10	3024 E 9	3070 E 2	3081 D 4	3092 F 2	3106 F 7	3116 E 8	3124 D10	3133 E 8	3143 D 9	5160 E 2	7103 F 5	
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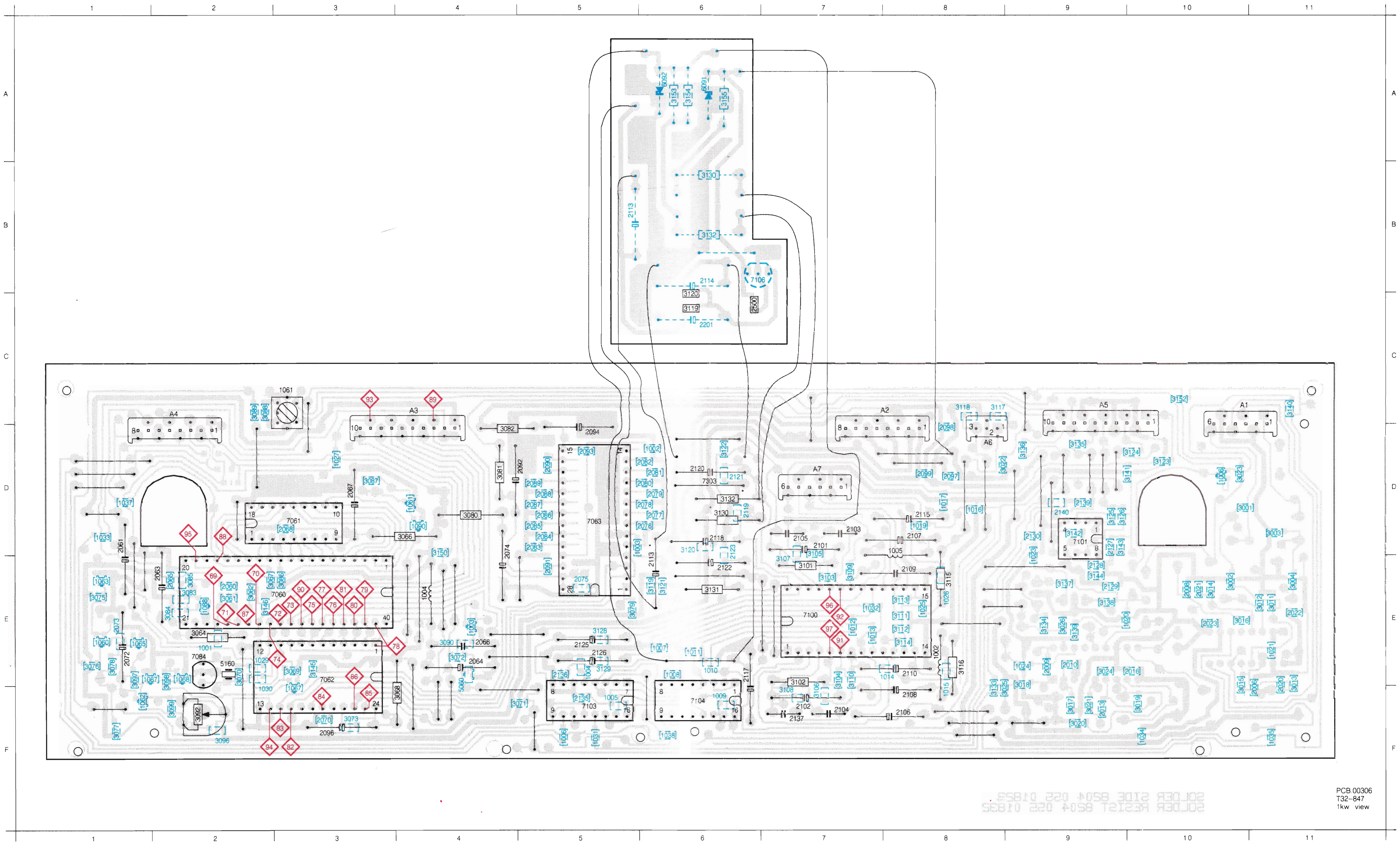

PRINT LAY-OUT CHIP-SIDE CDV988

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1002 D 6	1007 E 6	1017 D 8	1030 F 3	1061 C 3	2008 E10	2061 D 1	2074 D 4	2084 D 5	2094 D 5	2106 F 8	2118 D 6	2129 E10	3002 E10	3018 F 9	3062 E 2	3075 E 1	3085 E 2	3099 F 2	3110 E 7	3119 C 6	3129 E 5	3137 E 9	3150 D 4	7061 D 3	
1002 E 8	1008 E 6	1019 D 8	1031 F 5	1062 F 1	2009 E 9	2063 E 1	2075 E 5	2085 D 5	2096 F 3	2107 D 8	2119 D 6	2130 D 9	3003 D11	3019 F10	3064 E 2	3076 E 1	3086 E 3	3101 E 7	3111 E 8	3120 D 6	3130 D 6	3138 E 9	3152 C10	7062 E 3	
1003 E 4	1009 F 6	1020 E 9	1032 E 8	1063 E 1	2010 E 9	2064 E 4	2076 D 6	2086 D 5	2097 D 8	2108 F 8	2120 D 6	2135 F 5	3004 E11	3020 F 9	3066 D 4	3077 F 1	3087 D 3	3102 E 7	3112 E 8	3120 C 6	3130 B 6	3139 E 9	3153 A 6	7063 D 5	
1003 D 5	1010 E 6	1021 E11	1033 D 1	1065 E 2	2013 F 9	2065 E 2	2077 D 6	2087 D 5	2098 D 8	2109 E 8	2121 D 6	2136 E 5	3011 E11	3021 F 9	3067 E 2	3078 E 1	3088 C 2	3103 E 7	3113 E 8	3121 E 6	3131 E 6	3140 C11	3154 A 6	7084 E 2	
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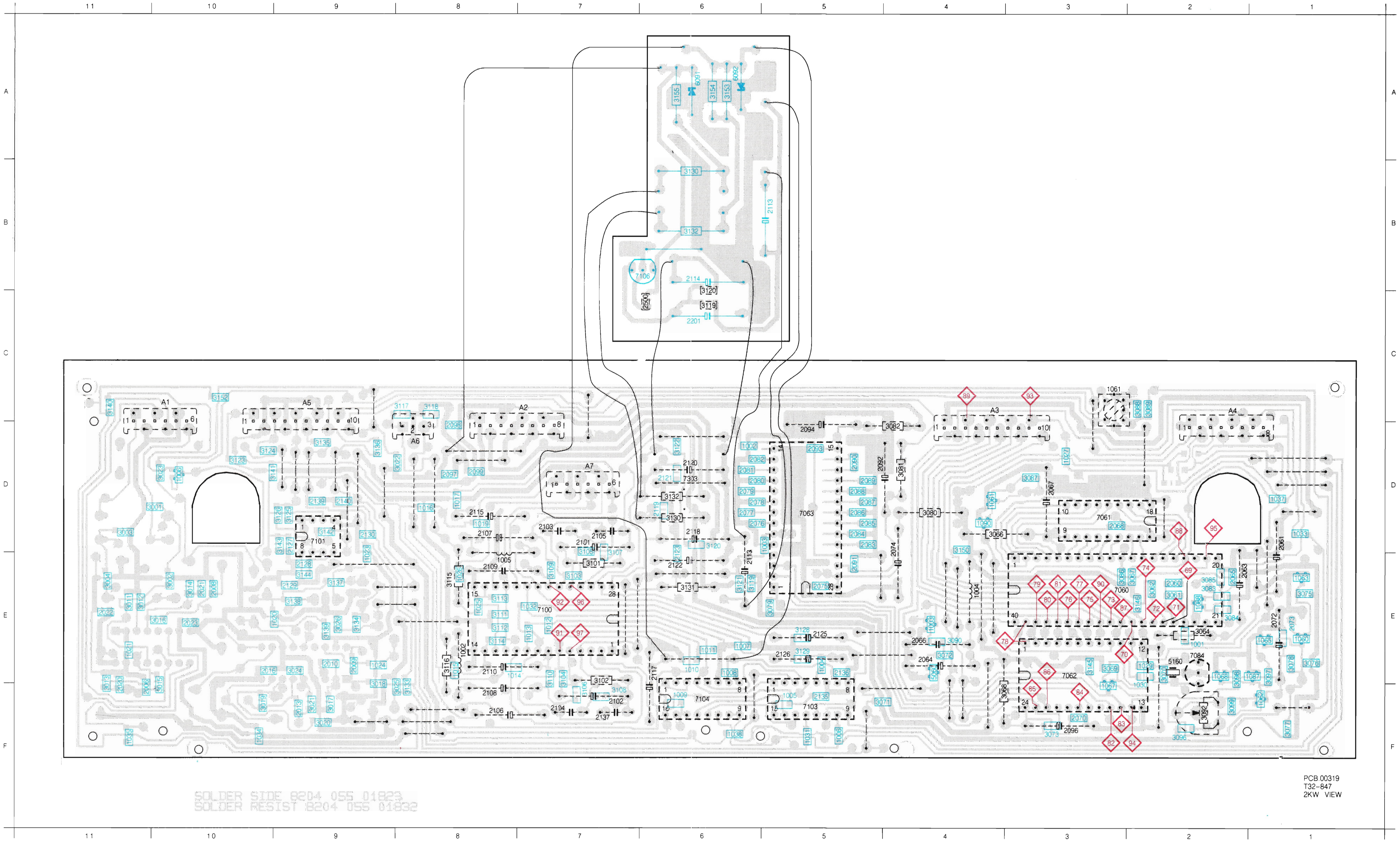
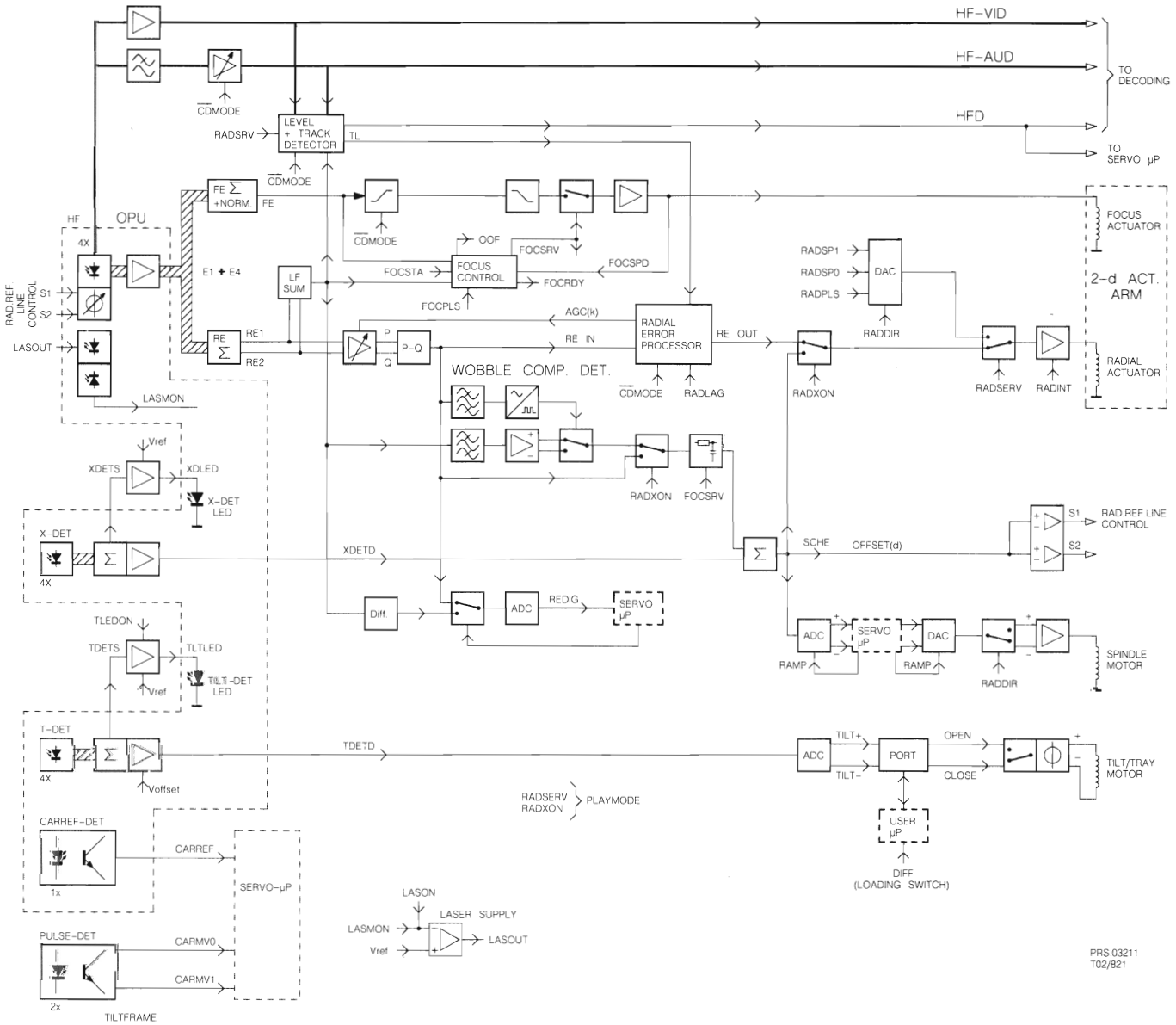
1004 E 4	1012 E 7	1024 E 9	1035 F11	1068 E 2	2020 E11	2067 D 3	2079 D 6	2089 D 5	2101 D 7	2113 E 6	2123 D 6	2139 D 9	3013 E11	3023 D10	3069 E 3	3080 D 4	3090 E 4	3105 D 7	3115 E 8	3123 D10	3132 B 6	3142 D 9	5060 E 4	7101 D 9	
1005 F 5	1013 E 7	1025 E 8	1037 D 1	1087 E 2	2021 E10	2068 D 3	2080 D 6	2090 D 5	2102 F 7	2113 B 5	2125 E 5	2140 D 9	3014 E10	3024 E 9	3070 E 2	3081 D 4	3092 F 2	3106 F 7	3116 E 8	3124 D10	3133 F 8	3143 D 9	5160 E 2	7103 F 5	
1005 E 8	1014 E 8	1026 E 8	1038 F 6	1088 E 2	2022 E11	2070 F 3	2081 D 6	2091 E 5	2103 D 7	2114 B 6	2126 E 5	2201 C 6	3015 E10	3025 F 8	3071 F 5	3082 D 5	3096 F 2	3107 E 7	3117 C 9	3125 D 9	3134 E 9	3144 E 9	6091 A 6	7104 F 6	
1006 F 5	1015 E 8	1027 D 3	1060 E 1	1090 D 4	2023 E10	2072 E 1	2082 D 6	2092 D 4	2104 F 7	2115 D 8	2127 D 9	2500 C 6	3016 E11	3026 E 9	3072 E 4	3083 E 2	3097 E 1	3108 F 7	3118 C 8	3126 D 9	3135 D 9	3145 E 3	6092 A 6	7106 B 7	



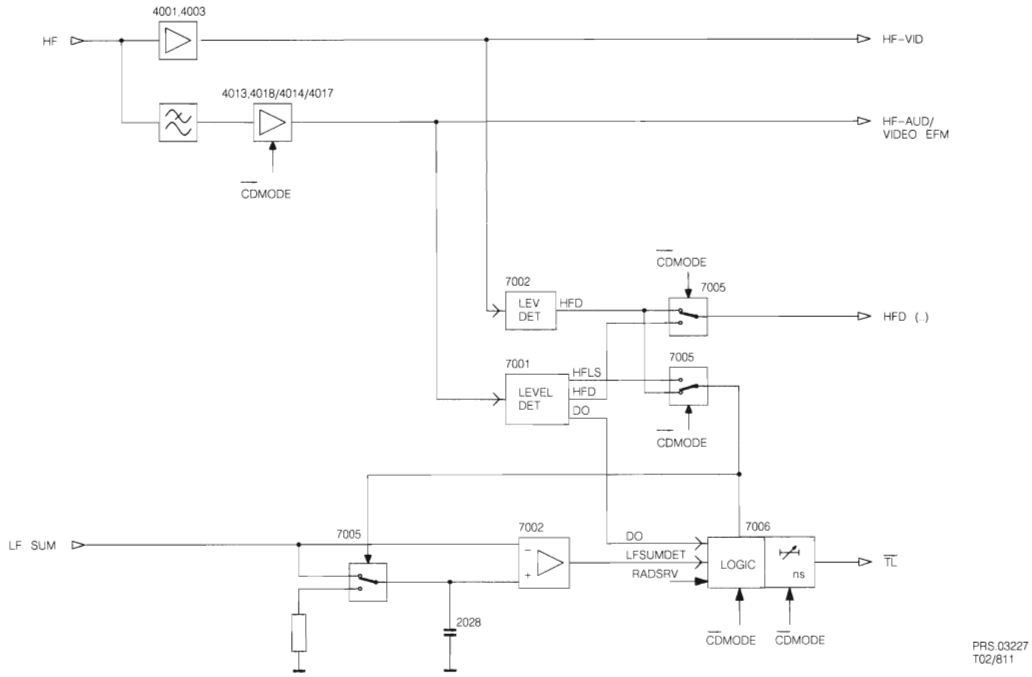
OVERL. BEH. BI J PCB. 00319

OVERL. BEH. BI J PCB. 00319

SERVO MAIN BLOCK DIAGRAM



SERVO 1 BLOCKDIAGRAM



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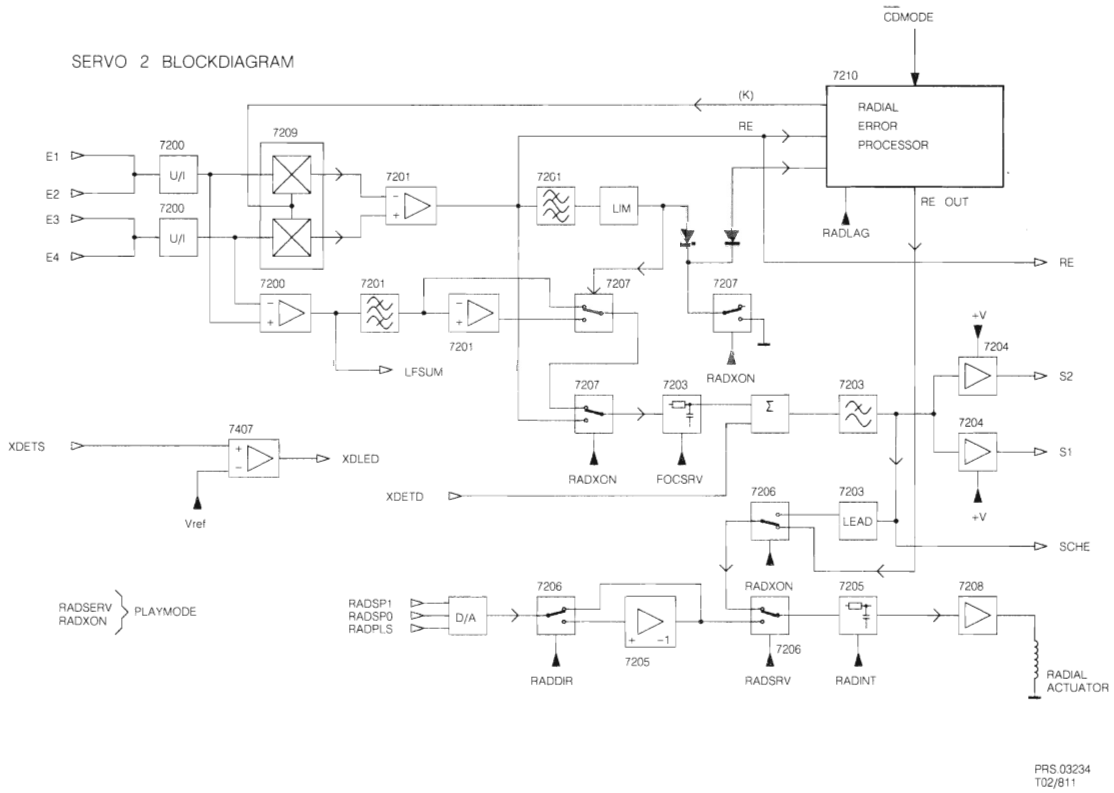
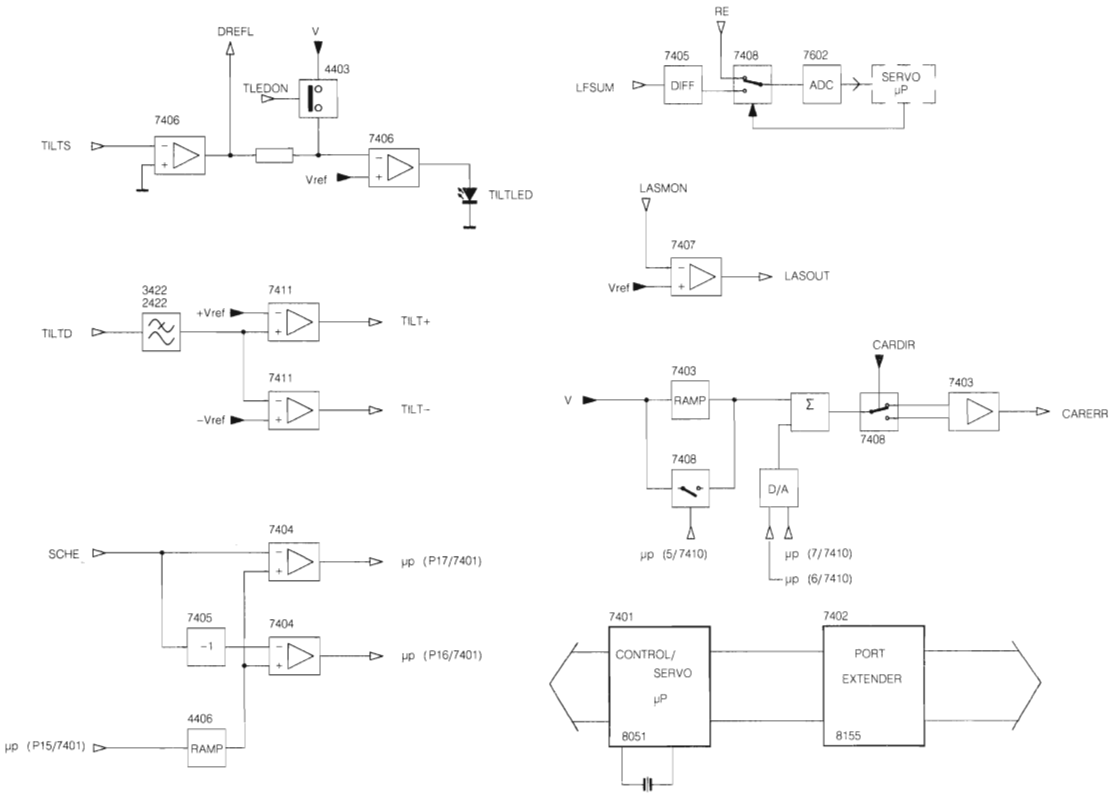
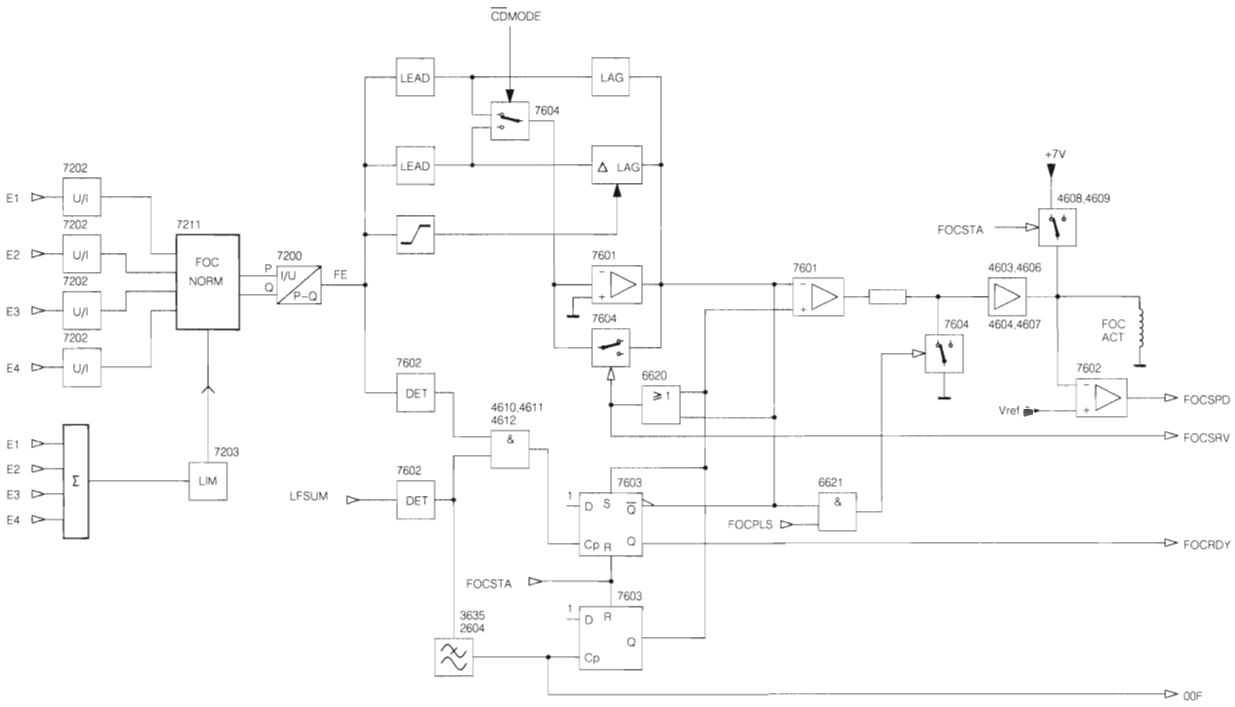


SERVO 3 BLOCKDIAGRAM



PRS 03233
T02/810

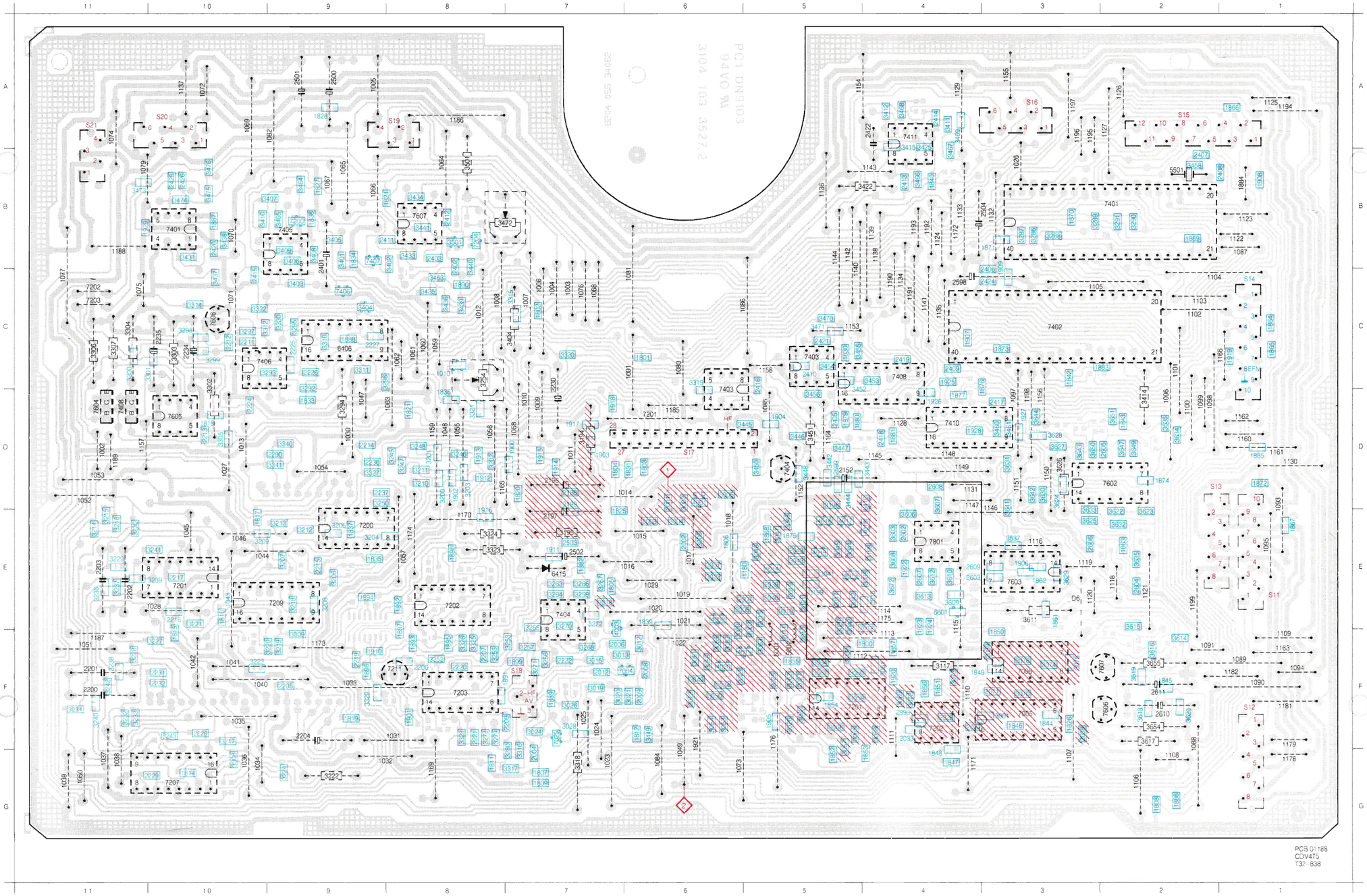
SERVO 4 BLOCKDIAGRAM



PRS 03235
T02/811

11-2

PRINT LAY-OUT SERVO I



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1004	C 7	1135	C 4	1879	D 5	2410	C 5
1005	A 9	1136	B 5	1880	D 5	2411	B 9
1006	C 7	1137	A10	1881	D 4	2412	B 8
1007	C 7	1138	B 4	1882	E 7	2413	B 4
1008	C 8	1139	B 4	1883	C 3	2414	A 4
1009	D 7	1140	B 5	1884	B 1	2415	C10
1010	C 8	1141	C 4	1885	D 1	2416	C 5
1010	D 7	1142	B 5	1886	G 2	2417	D 3
1011	D 7	1143	B 4	1887	B10	2418	D 4
1012	C 8	1144	B 5	1888	C 9	2419	C 4
1013	D10	1145	D 4	1889	F 7	2420	B10
1014	D 7	1146	D 3	1890	C 8	2421	C 5
1015	E 6	1147	D 4	1891	F 7	2422	A 4
1016	E 6	1148	D 4	1892	E 8	2424	C 3
1017	E 6	1149	D 4	1893	F 8	2425	B10
1018	E 6	1150	D 3	1894	E 9	2426	B10
1019	E 6	1151	D 3	1895	F 8	2500	A 9
1020	E 6	1152	D 5	1896	F 9	2501	A 9
1021	E 6	1153	C 5	1897	E 8	2502	E 7
1022	F 6	1154	A 5	1898	E 8	2503	E 7
1023	G 7	1155	A 3	1899	F 7	2504	B 3
1024	F 7	1156	D 3	1900	D 7	2598	C 4
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1029	E 6	1161	D 1	1905	F 5	2605	D 2
1030	D 9	1162	D 1	1906	E 3	2606	E 3
1031	F 8	1163	F 1	1907	C 4	2607	E 4
1032	G 9	1164	D 5	1908	B 1	2608	D 4
1033	F 9	1165	D 8	1909	B 3	2609	E 4
1034	G10	1166	C 1	1910	F 9	2610	F 2
1035	F10	1169	G 8	1911	E 7	2611	F 2
1036	G10	1170	E 8	1912	D 8	2999	F 4
1037	G11	1171	G 4	1913	D 8	3001	F 3
1038	G11	1172	B 4	1914	D 7	3002	D 6
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1048	D 8	1185	D 6	1924	E 4	3013	F 7
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1050	G11	1187	F11	1926	D 4	3018	E 7
1051	F11	1188	B11	1927	D 3	3019	F 7
1052	D11	1189	D11	1928	D 4	3020	F 7
1053	D11	1190	C 4	1929	B11	3021	F 6
1054	D 9	1191	C 4	2001	D 6	3023	E 6
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1060	C 8	1197	A 3	2008	F 6	3039	E 5
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1062	C 8	1199	E 2	2010	F 5	3041	E 5
1063	D 8	1800	F 5	2011	F 5	3042	E 5
1064	B 8	1801	C 6	2012	F 7	3043	E 5
1065	B 9	1802	C 7	2015	E 5	3044	E 5
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1067	B 9	1804	D 7	2017	E 5	3046	E 5
1068	C 7	1805	E 7	2019	E 5	3047	E 5
1069	A10	1806	E 6	2021	E 5	3048	E 5
1070	B10	1807	G 7	2022	F 6	3049	F 6
1071	C10	1808	G 2	2023	F 6	3050	F 6
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1073	G 6	1811	G 8	2025	F 5	3052	F 6
1074	A11	1812	F 6	2026	F 5	3053	F 6
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1080	C 6	1818	D10	2037	F 4	3058	F 4
1081	C 6	1819	F 9	2038	F 3	3059	F 5
1082	A 9	1820	D 7	2039	F 3	3060	F 5
1084	G 6	1821	D 8	2042	E 4	3061	F 4
1085	D 5	1824	B 9	2043	E 5	3062	F 5
1086	C 6	1825	E 7	2152	D 5	3063	F 5
1087	G 1	1826	F 3	2196	D 7	3064	F 5
1088	F 2	1827	B 9	2197	E 7	3065	F 5
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1097	D 3	1837	E 9	2205	F 9	3073	F 4
1098	D 2	1838	B 9	2206	F 8	3074	F 3
1099	D 2	1839	E 6	2207	F 8	3075	F 3
1100	D 2	1840	B 4	2209	F 7	3076	F 3
1101	C 2	1842	C 3	2211	C10	3117	F 4
1102	C 2	1843	D 2	2212	C10	3194	D 7
1103	C 2	1844	F 3	2213	D10	3195	E 7
1104	C 2	1845	F 2	2214	D 9	3196	D 5
1105	C 3	1846	F 3	2215	E 9	3198	E 4
1106	G 2	1847	G 4	2216	E10	3199	E 5
1107	G 3	1848	F 4	2217	E10	3200	D 8
1108	G 2	1849	F 4	2219	F 9	3201	D 8
1109	F 1	1850	F 3	2220	F 8	3202	D 8
1110	F 4	1851	F 4	2221	F 8	3203	D 8
1111	F 4	1852	G 5	2222	F 7	3204	E 9
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1113	F 4	1854	F 5	2225	C 9	3206	E 9
1114	E 4	1855	F 5	2226	C 9	3207	E 9
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1118	E 2	1861	E 3	2229	G10	3210	D 8
1119	E 3	1862	E 3	2230	C 7	3211	D 8
1120	E 3	1863	E 2	2231	F10	3212	E 9
1121	E 2	1864	C 1	2232	F10	3213	E 9
1122	B 1	1865	C 1	2234	C10	3214	E11
1123	B 1	1866	A 1	2235	C10	3215	E11
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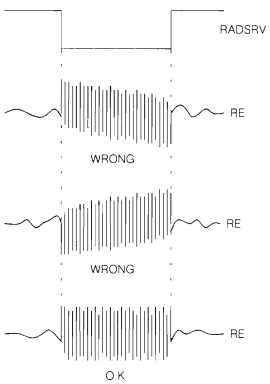
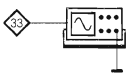
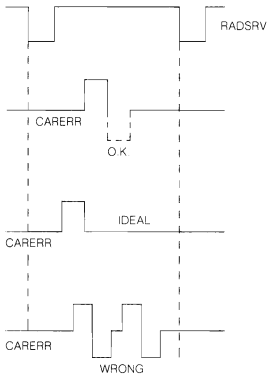
1125	A 1	1868	E 5	2237	D 9	3217	F10
1126	A 2	1869	B 2	2290	D 9	3218	E 9
1127	A 2	1870	B 3	2401	B 9	3219	F 9
1128	D 4	1871	B 3	2402	B 8	3220	F 9
1129	A 4	1872	D 1	2403	B 8	3221	E10
1130	D 1	1873	C 3	2405	D 5	3222	G 9
1131	D 4	1874	D 2	2406	C 3	3223	F10

RE ADJUSTMENT

STEP	SIGNAL	MODE	◇				REMARKS
1	—	STANDBY		R3254			PUT R3254 IN THE MID-POSITION
2	—	STANDBY		R3472			
3	RE	STILL PIC. VIDEO TESTDISC CHAPTER 25	PIN 1 OF IC7201 ON SERVO 2			TRIGGER ON ◇26 RADSRV	
4		PRESS FWD SCAN		R3254			SIGNALS DURING FWD SCAN (STILL PIC.)
5	CARERR	PRESS FWD SCAN	 ON SERVO 3	R3272			SIGNALS DURING FWD SCAN (STILL PIC.)

3224 G 9
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3228 F11
3229 E11
3230 E11
3231 F11
3232 F11
3233 F11
3236 E11
3237 E11
3238 F11
3239 E10
3240 F11
3241 E10
3242 F11
3243 F10
3245 D 8
3246 D 8
3247 D 8
3248 D 8
3250 D 9
3252 F 8
3253 F 7
3254 C 8
3255 F 8
3256 F 7
3257 F 7
3259 E 7
3263 E 7
3264 E 7
3265 E 7
3266 E 7
3267 E 7
3268 F 7
3270 E 7
3271 F 7
3272 E 7
3278 F 8
3279 F 8
3280 F 7
3286 B 3
3287 B 3
3288 B 3
3289 B 3
3290 B 2
3291 B 2
3292 C 9
3293 C10
3294 D 9
3295 C 9
3296 C 9
3297 C10
3298 C10
3299 C10
3300 C11
3301 C11
3302 C10
3303 C10
3304 C11
3305 D10
3306 C11
3307 C11
3308 G10
3309 F 9
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3311 C 9
3312 C10
3314 C10
3315 C 7
3316 F 7
3317 G 7
3318 G 7
3319 C 6
3320 C 7
3321 D 8
3322 C10
3323 E 8
3324 E 8
3325 F 8
3326 F 8
3327 D 9
3328 F 8
3329 F 9
3330 C 9
3340 D 9
3341 D 9
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3404 C 9
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3606 E 4
3607 D 4
3608 E 4
3609 E 4
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3612 E 4
3613 E 4
3614 F 2
3615 E 2
3616 F 2
3617 F 2
3618 F 2
3619 F 2
3620 F 2
3622 E 2
3623 E 2
3624 D 3
3625 E 3
3626 D 3
3627 D 3
3628 D 3
3629 E 3
3630 D 3
3631 D 3
3632 E 2
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3634 D 2
3635 E 2
3636 D 2
3637 E 3
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3642 D 3
3643 D 3
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3672 E 4
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4003 E 7
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4014 E 5
4015 E 5
4016 E 5
4017 E 5
4018 E 4
4019 F 6
4020 F 6
5001 F 5
5002 F 5
5501 B 2
6406 C 9
6410 D 4
6415 E 7
6601 E 4
7005 F 3
7006 F 3
7012 E 4
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7202 C11
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7207 G10
7209 E 9
7211 F 8
7401 B10
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7403 D 6
7403 C 5
7404 E 7
7404 D 5
7405 B 9
7406 C 9
7406 C10
7407 B 9
7408 C 4
7408 D11
7410 D 4
7411 A 4
7602 D 2
7603 E 3
7604 D11
7605 D10
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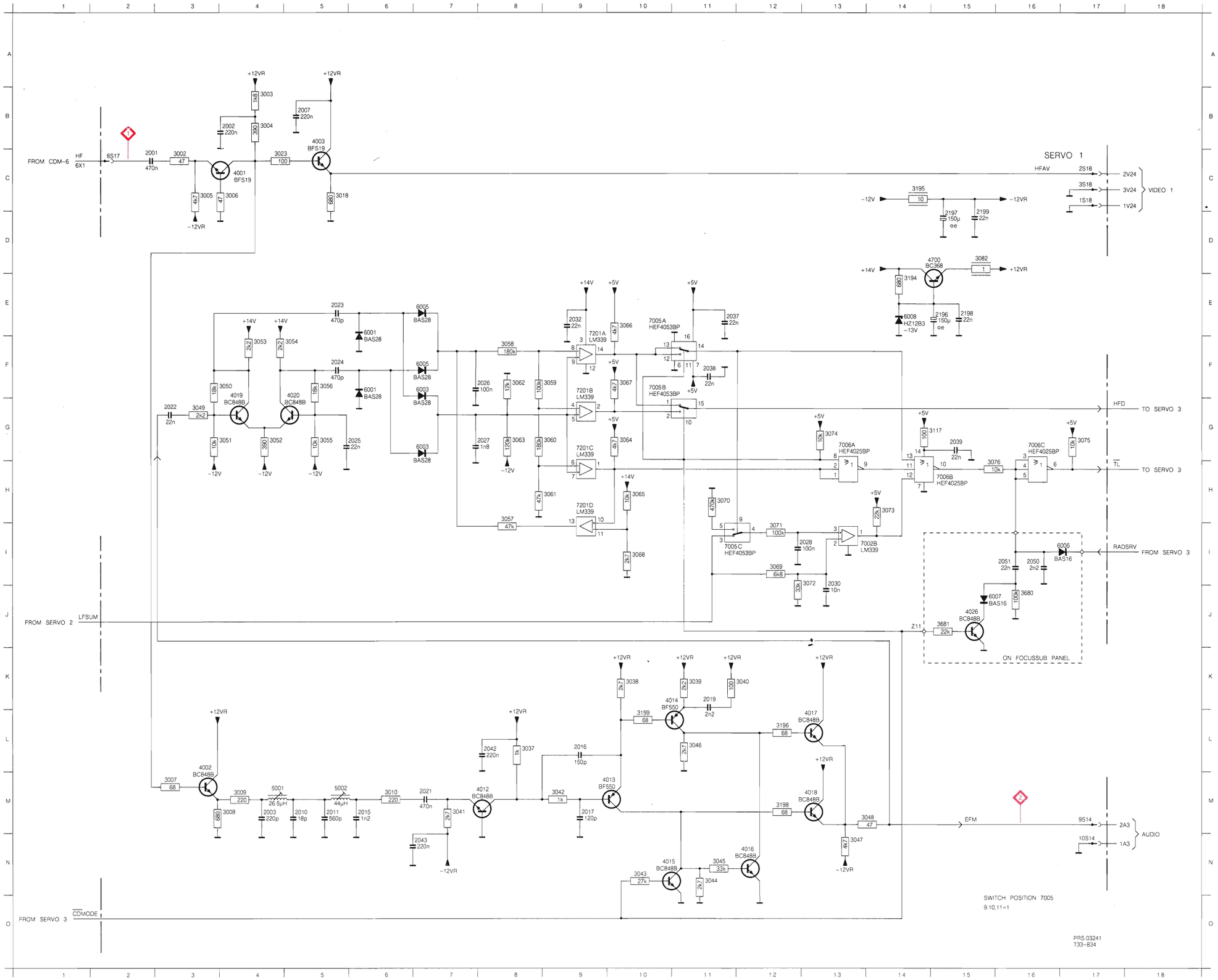
7801 E 4

MDA 01596
T05-840

CIRCUIT DIAGRAM SERVO I



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2007	B	5
2010	M	5
2011	M	5
2015	M	6
2016	L	9
2017	M	9
2019	K	11
2021	M	7
2022	G	3
2023	E	5
2024	F	5
2025	G	6
2026	F	8
2027	G	8
2028	I	13
2030	I	13
2032	E	9
2037	E	11
2038	F	11
2039	G	15
2042	L	8
2043	N	7
2050	I	16
2051	I	16
2196	E	15
2197	D	15
2198	E	15
2199	D	15
3002	C	3
3003	B	4
3004	B	4
3005	C	3
3006	C	4
3007	M	3
3008	M	4
3009	M	4
3010	M	6
3018	C	5
3023	C	4
3037	L	8
3038	K	10
3039	K	11
3040	K	12
3041	M	7
3042	M	9
3043	N	10
3044	N	11
3045	N	11
3046	L	11
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3199	L	10
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3681	J	15
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4002	L	3
4003	B	5
4012	M	8
4013	M	10
4014	K	11
4015	N	10
4016	N	12
4017	L	13
4018	M	13
4019	F	4
4020	F	5
4026	J	15
4700	D	15
5001	M	4
5002	M	5
6001	E	6
6001	F	6
6003	G	7
6003	F	7
6005	F	7
6005	E	7
6006	I	17
6007	J	16
6008	E	14
7005	E	10
7005	F	10
7005	I	11
7006A	G	13
7006B	H	15
7006C	G	16
7201	E	9
7201	F	9
7201	G	9
7201	H	9

CIRCUIT DIAGRAM SERVO II

2200	E 7	2206	G15	2214	E 4	2222	H19	2229	F12	2290	C20	3203	C 2	3209	D 5	3216	F 7	3222	D10	3230	D11	3238	F 9	3252	H15	3259	I 18	3268	J18	3280	G 9	3291	M11	3297	K16	3303
2201	E 7	2207	G16	2215	F 4	2224	L14	2230	M 4	2311	E 3	3204	A 3	3210	E 3	3217	A 7	3223	D10	3231	D12	3239	F 9	3253	H16	3263	H18	3270	I 19	3286	L10	3292	L13	3298	L17	3304
2202	C11	2209	H 8	2216	C 9	2225	M14	2231	E15	2800	E10	3205	C 3	3212	G 4	3218	A 7	3224	D10	3232	F15	3240	E11	3254	I 15	3264	G19	3271	J18	3287	L11	3293	L13	3299	L17	3305
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2204	B15	2212	L16	2220	H17	2227	L12	2234	L19	3201	B 2	3207	D 4	3214	F 6	3220	B 8	3228	D11	3236	E 7	3242	F11	3256	I 18	3266	I 18	3278	H 8	3289	L11	3295	L14	3301	K18	3307
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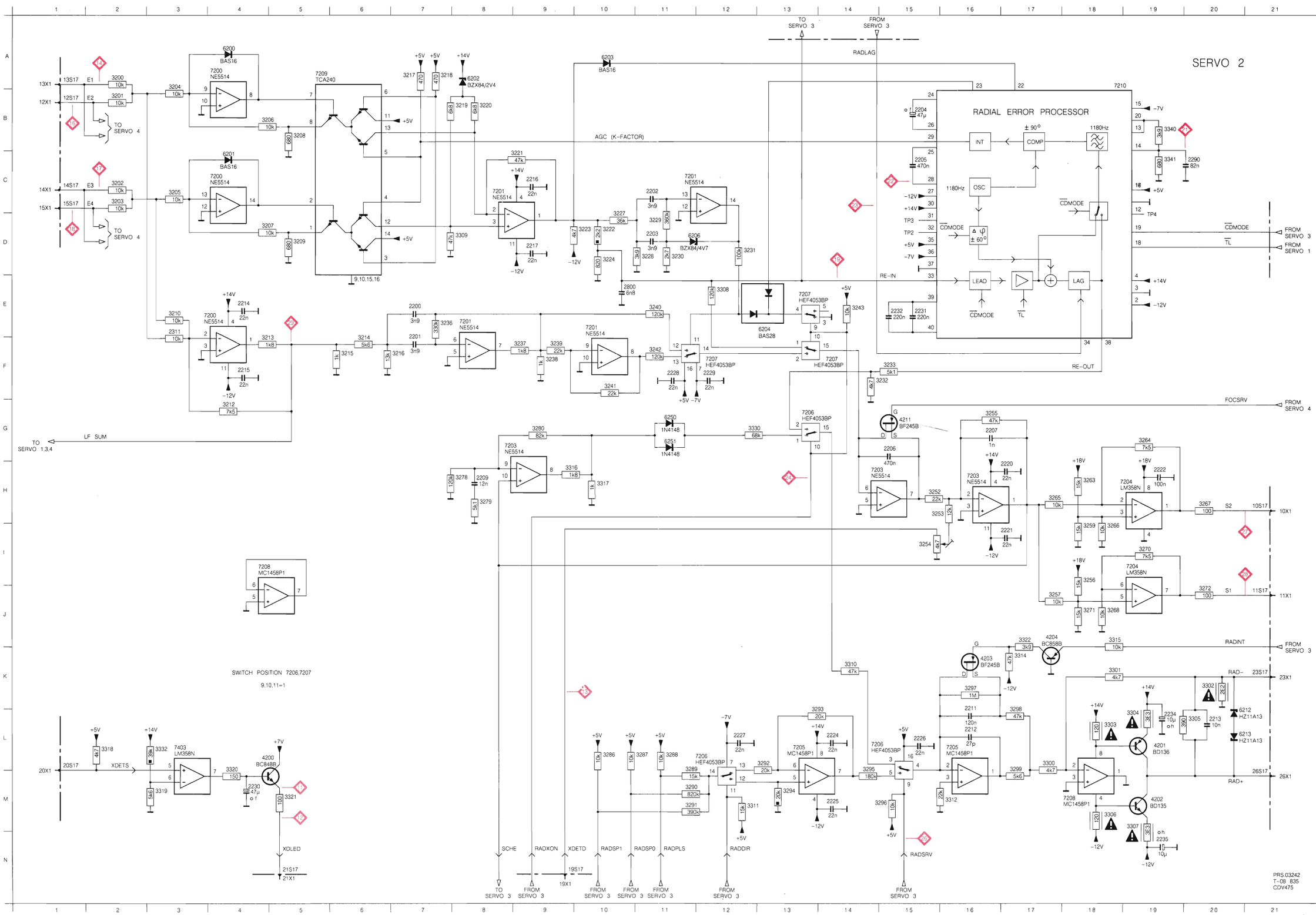

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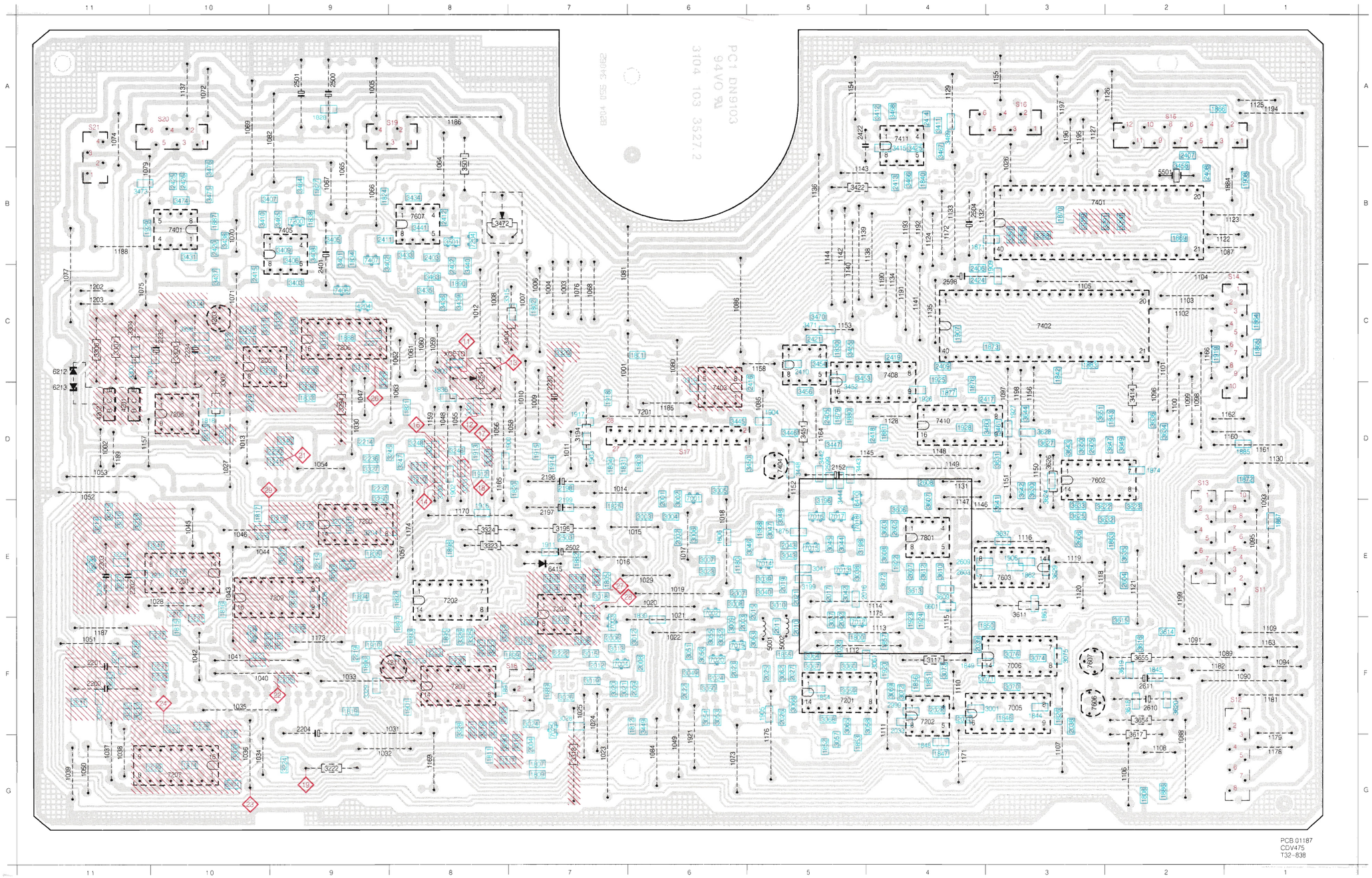

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1099	D 2	1815	F10	2006	F 7	3004	F 6	3097	D 2	3318	F 5
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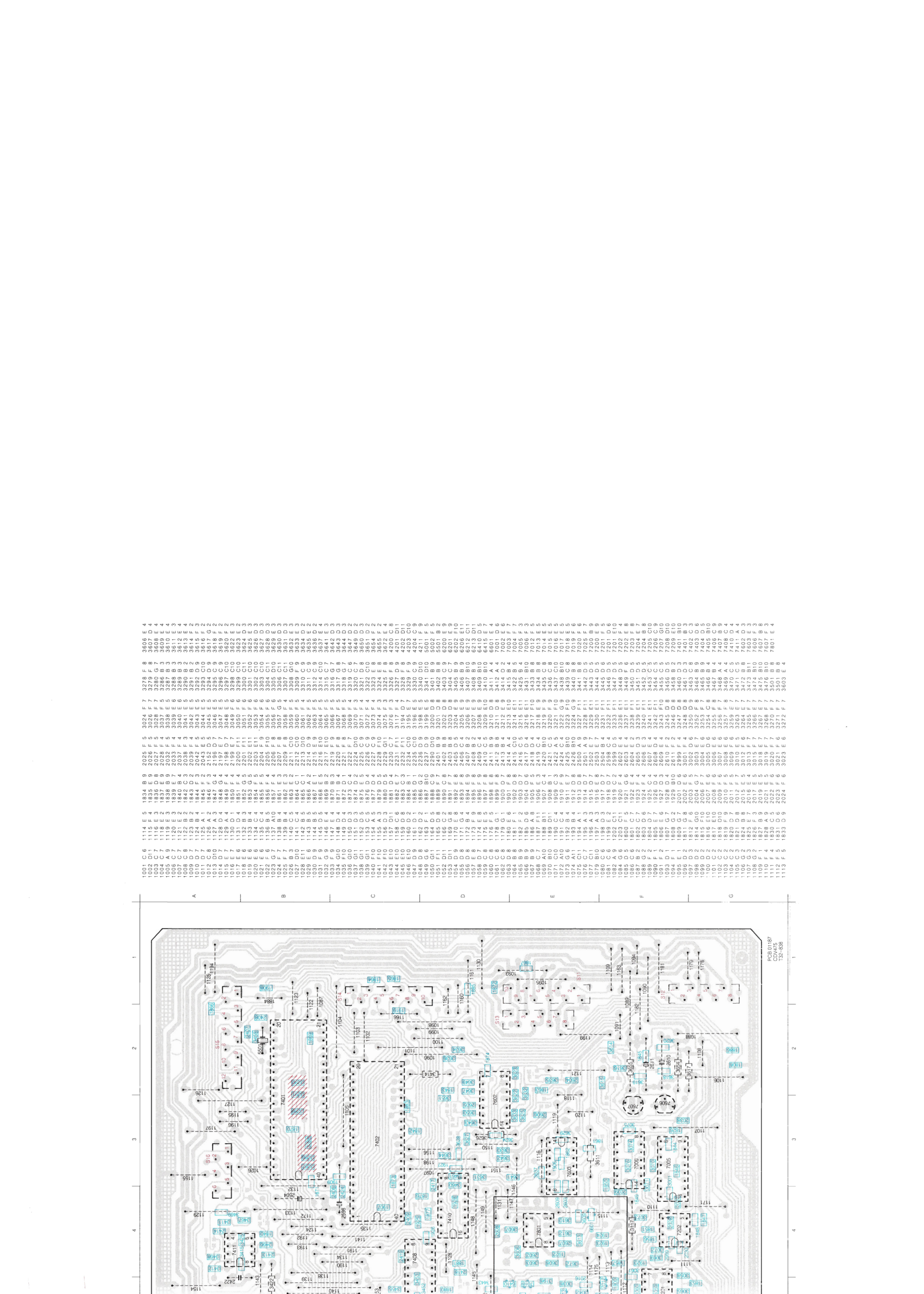
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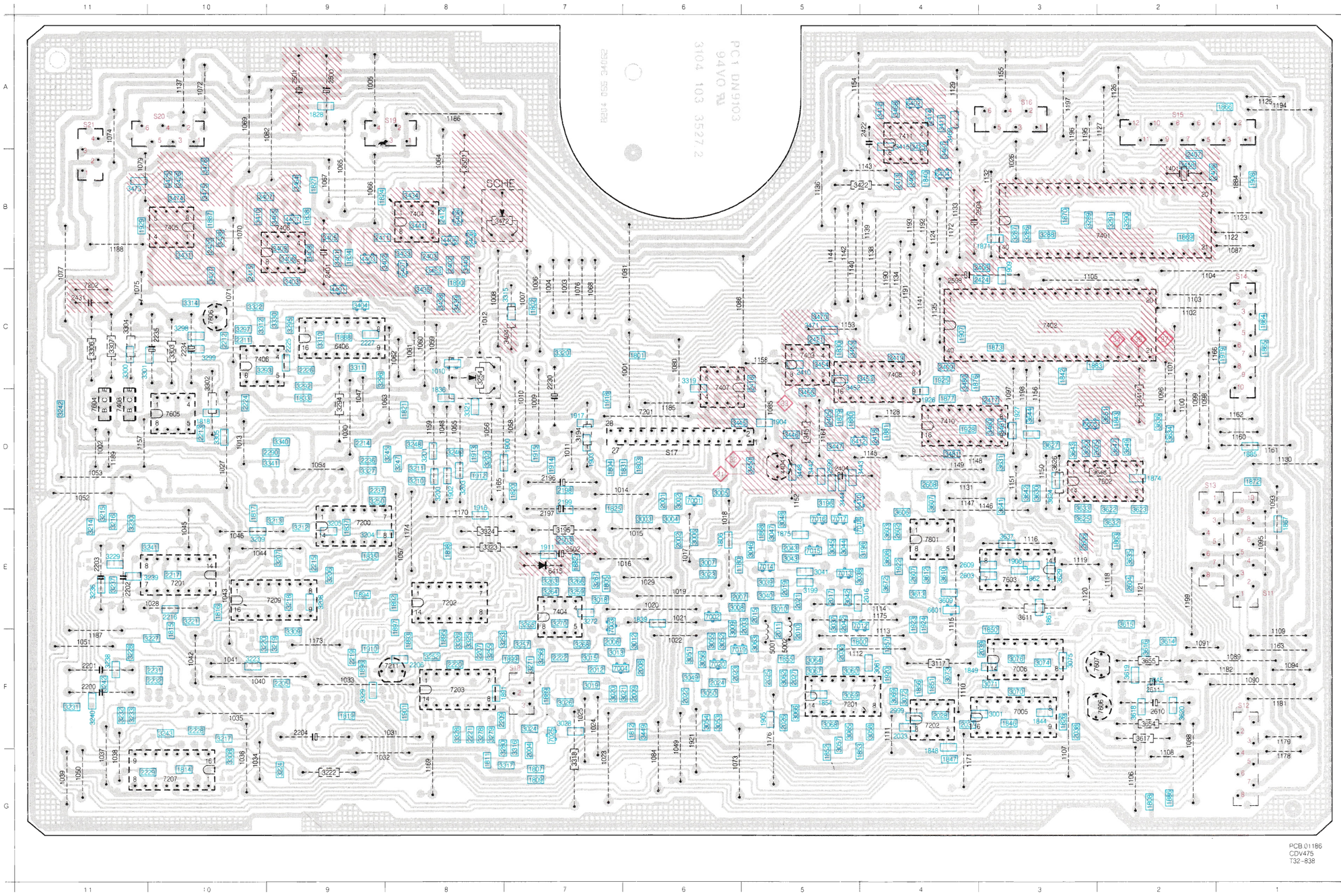

SERVO MEASUREMEI

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3	FI FO FO PIN3 C
4	X DI
5	E1,E2
6	RE
7	AGC CON
8	RAD RAD RAD
9	
10	LFSI
11	LASEF LASEF
12	CA

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1004	C 7	1144	B 5	1896	F 9	2604	E 2	3272	F 7	3305	
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1102	C 2	1851	F 4	2232	F11	3220	F 9				
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1104	C 2	1853	F 4	2235	C10	3222	G 9				
1105	C 3	1854	F 5	2236	D 9	3223	F10				
1106	G 2	1855	F 5	2237	D 9	3224	G 9				
1107	G 3	1856	F 4	2290	D10	3227	F11				
1108	G 2	1857	F 4	2401	B 9	3228	F11				
1109	F 1	1861	E 3	2402	B 8	3229	E11				
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1127	A 2	1879	D 5	2419	C 4	3248	D 8				
1128	D 4	1880	D 5	2420	B10	3250	D 9				
1129	A 4	1881	D 4	2421	C 5	3252	F 8				
1130	D 1	1882	E 7	2422	A 4	3253	F 7				
1131	D 4	1883	C 3	2424	C 4	3254	C 8				
1132	B 3	1884	B 1	2425	B10	3255	F 8				
1133	B 4	1885	D 1	2426	B10	3256	F 7				
1134	C 4	1886	G 2	2431	C11	3257	F 7				
1135	C 4	1887	B10	2500	A 9	3259	E 7				
1136	B 5	1888	C 9	2501	A 9	3263	E 7				
1137	A10	1889	F 7	2502	E 7	3264	E 7				
1138	B 4	1890	C 8	2503	E 7	3265	E 7				
1139	B 4	1891	F 7	2504	B 3	3266	E 7				
1140	B 5	1892	E 8	2598	C 4	3267	E 7				

SERVO
MEASUREMENTS AND ADJUSTMENTS

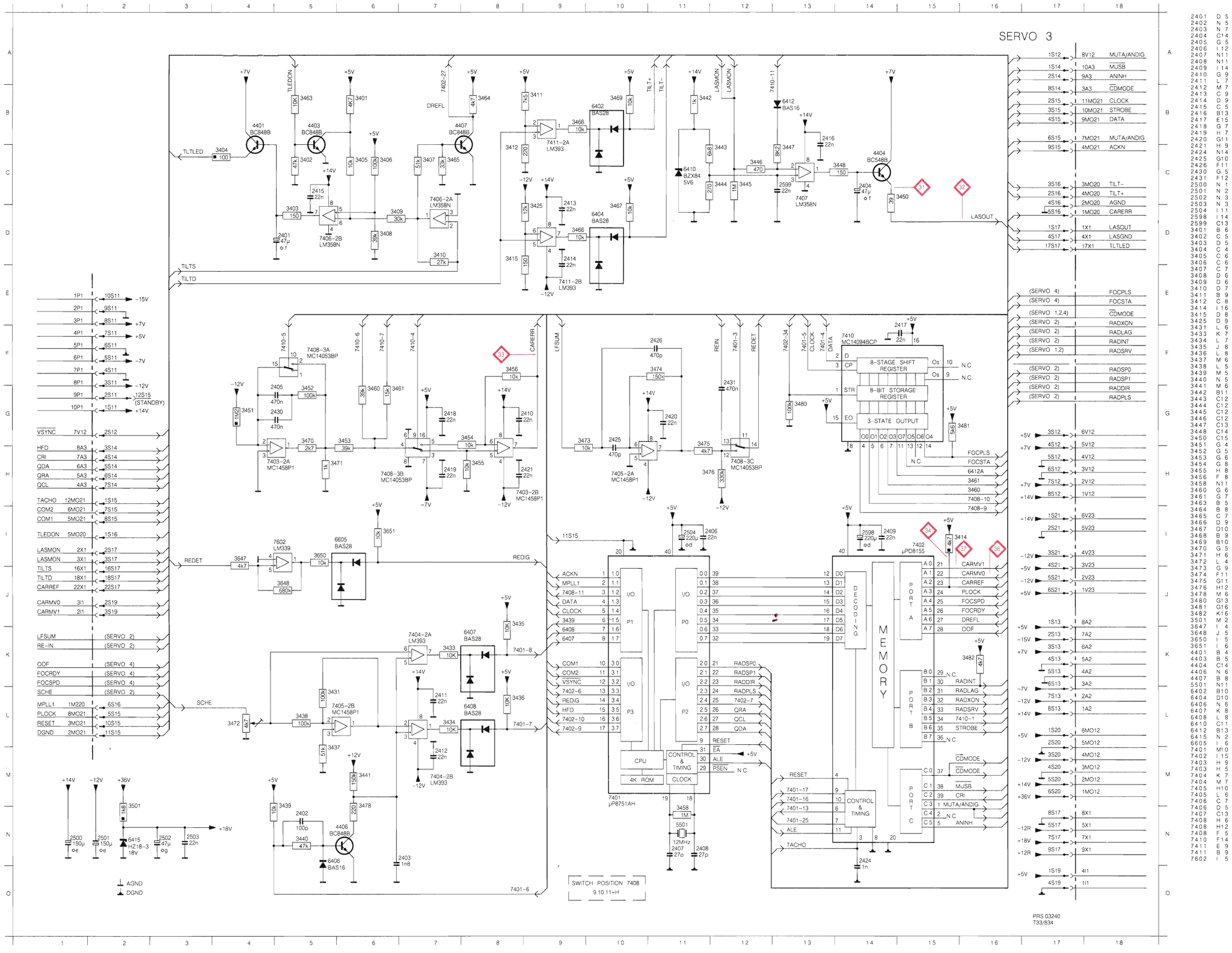
STEP	SIGNAL	MODE	◇			REMARKS
1	HFin	PLAYTRACK 1 TESTDISC 5	1	◇1 DC: −6V DC	100−150mV AC	
2	EFM	PLAYTRACK 1 TESTDISC 5	2	◇2 DC: +2,5V DC	1.5−2.5V AC	EYE−PATTERN HF SEE DRAWING 37 017 B8
3		FOCUS STARTUP				A=FOCUS FOUND B=FOCUS NOT FOUND
	FE		3		B, A, −1V, −12V	
	FOC RDV		4		5V, 0V	
	FOC SRV		6		0V, −12V	ONLY IF LFSUM IS PRESENT: ◇ LFSUMŒ2V
	PIN3 OF 7603		7		5V, 0V	
4			11,12	◇11 V ◇12: 3−5V DC		
	X DETD	NO DISC	13	◇13 V: −7ŒE0V.Æ+7V		MOVE ACTUATOR MANUALLY
5	E1,E2,E3,E4	RADIAL CONTROL PLAYTESTDISC 5	14,16,17,18	◇13 V: −3.ÆE..Æ−2V DC	A A=1180Hz E1≡E2≡E3≡E4	
6	REIN	PLAY TESTDISC 5	19		0V A A=400mV	
7	AGC CONTROL	PLAY	21		2V pp 1180Hz	
			22	◇ V: −0.ÆV.Æ−4V DC		
8	RADLAG	PLAY	23	0V DC		
	RADXON	PLAY	24	0V DC		
	RADSRV	PLAY	26	5V DC		
9		PLAY	27	9V DC	AC	
		PLAY	28	9V DC		
10	LFSUM	PLAY	29	3V.ÆV.Æ5.5V		
		PAUSE	29	Æ11V		
11	LASER CURR.	PLAY	31,32	◇31 V ◇32: | 2.5V | DC		
	LASER SUPPLY	PLAY	32	◇32 V: 2V DC		
12	CARERR	PLAY TESTDISC 5	32		40mV, 0V, ≈ 50mS, −330mV	

MDA 01595
T05−840

3268 F 7 3270 E 7 3271 F 7 3272 E 7 3278 F 8 3279 F 8 3280 F 7 3286 B 3 3287 B 3 3288 B 3 3289 B 3 3290 B 2 3291 B 2 3292 C 9 3293 C10 3294 D 9 3295 C 9 3296 C 8 3297 C10 3298 C10 3299 C10 3300 C11 3301 C10
3302 C10 3303 C10 3304 C11 3305 D10 3306 C11 3307 C11 3308 G10 3309 F 9 3310 C 9 3311 C 9 3312 C 9 3314 C10 3315 C 7 3316 F 7 3317 G 8 3318 G 7 3319 C 6 3320 C 7 3321 D 8 3322 C10 3323 E 8 3324 E 8 3325 F 8
3326 F 8 3327 D 9 3328 F 8 3329 F 9 3330 C 9 3340 D10 3341 D10 3401 B 9 3402 B 8 3403 C 9 3404 C 7 3405 B 9 3406 B 9 3407 B10 3408 B 9 3409 B10 3410 B10 3411 A 4 3412 A 4 3414 D 2 3415 A 4 3422 B 5
3425 A 4 3431 B10 3433 B 8 3434 B 8 3435 C 8 3436 C 8 3437 C10 3438 B10 3439 C 8 3440 B 8 3441 B 8 3442 D 5 3443 D 4 3444 D 5 3445 D 6 3446 D 5 3447 D 5 3448 D 5 3449 F 6 3450 D 5 3451 D 5 3452 C 5 3453 C 5
3454 C 5 3455 C 5 3456 D 5 3458 B 2 3460 D 3 3461 D 3 3463 C 8 3464 B 9 3465 B 9 3466 B 4 3467 A 4 3468 A 4 3469 A 4 3470 C 5 3471 C 5 3472 B 8 3473 B11 3474 B10 3475 B10 3476 B10 3480 C 4 3481 D 4 3501 B 8
3603 E 4 3606 E 4 3607 D 4 3608 E 4 3609 E 4 3610 E 4 3611 E 3 3612 E 4 3613 E 4 3614 F 2 3615 E 2 3616 F 2 3617 F 2 3618 F 2 3619 F 2 3620 F 2 3622 D 3 3623 D 2 3624 D 3 3625 E 3 3626 D 3 3627 D 3 3629 E 3
3630 D 3 3631 D 3 3632 E 3 3633 D 3 3634 D 2 3635 E 2 3636 D 2 3637 E 3 3641 D 3 3642 D 3 3643 D 3 3644 D 3 3647 D 2 3648 D 3 3649 D 2 3650 D 3 3651 D 2 3654 F 2 3655 F 2 3672 E 4 4401 C 9 4403 B 9 4404 D 5
4406 B 8 4407 B 9 5001 F 5 5002 F 5 6406 C 9 6410 D 4 6412 D 5 6415 E 7 6601 E 4 7001 D 6 7002 E 6 7003 E 7 7004 F 7 7005 F 3 7006 F 3 7012 E 5 7013 E 5 7014 E 5 7015 E 5 7016 E 5 7017 E 5 7018 E 4 7019 F 6
7020 F 6 7025 F 7 7200 E 9 7201 F 5 7201 D 6 7201 E10 7202 F 4 7202 C11 7202 E 8 7203 F 8 7207 G10 7209 E10 7211 F 9 7401 B 3 7402 C 3 7403 C 5 7404 E 7 7404 B 8 7405 B10 7406 C10 7406 B10 7407 C 6 7408 D11
7408 C 4 7410 D 4 7411 A 4 7602 D 3 7603 F 3 7604 D11 7605 D10 7606 C10 7606 F 2 7607 F 2 7801 E 4

CIRCUIT DIAGRAM SERVO III

SERVO 3



CIRCUIT DIAGRAM SERVO IV

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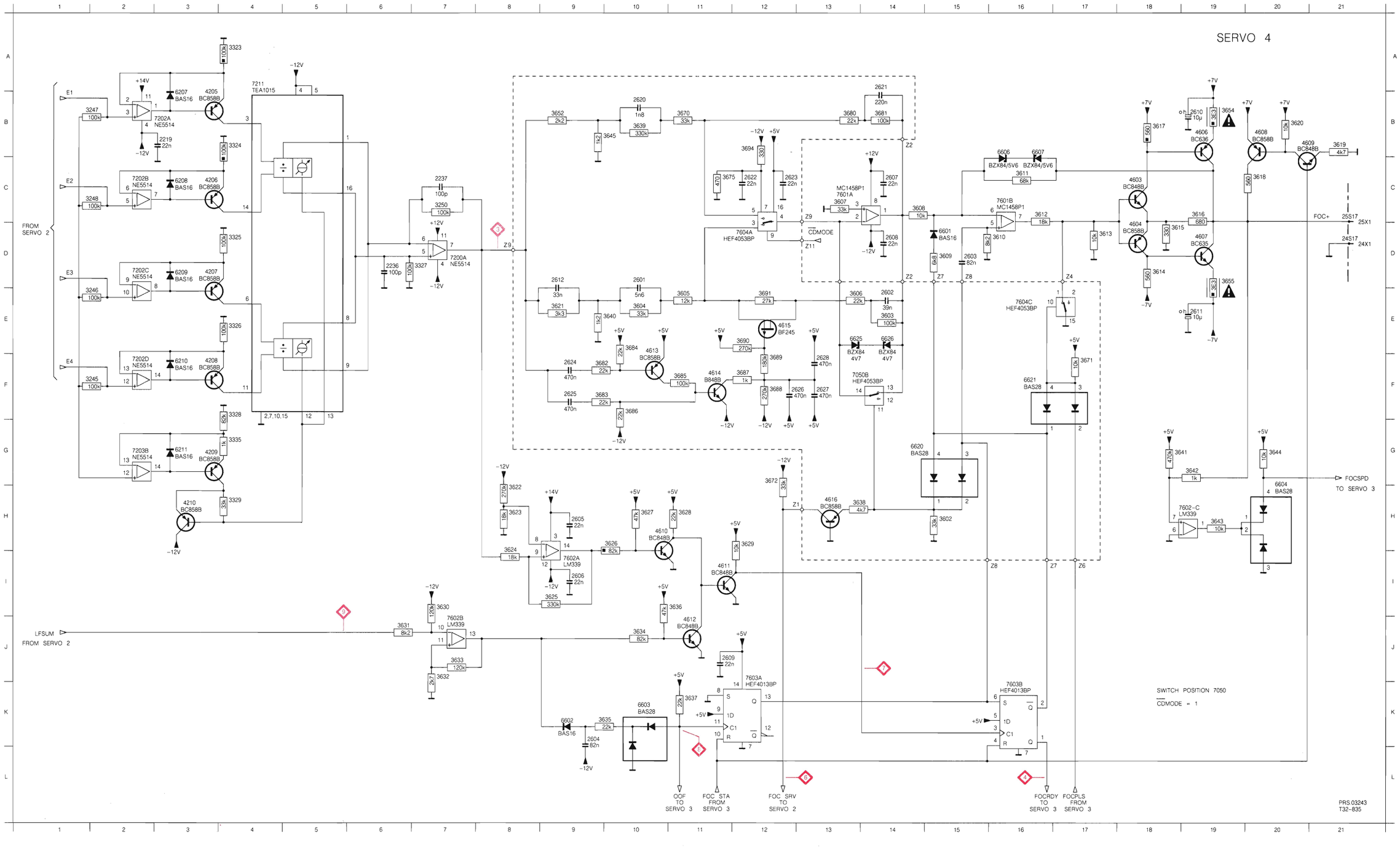
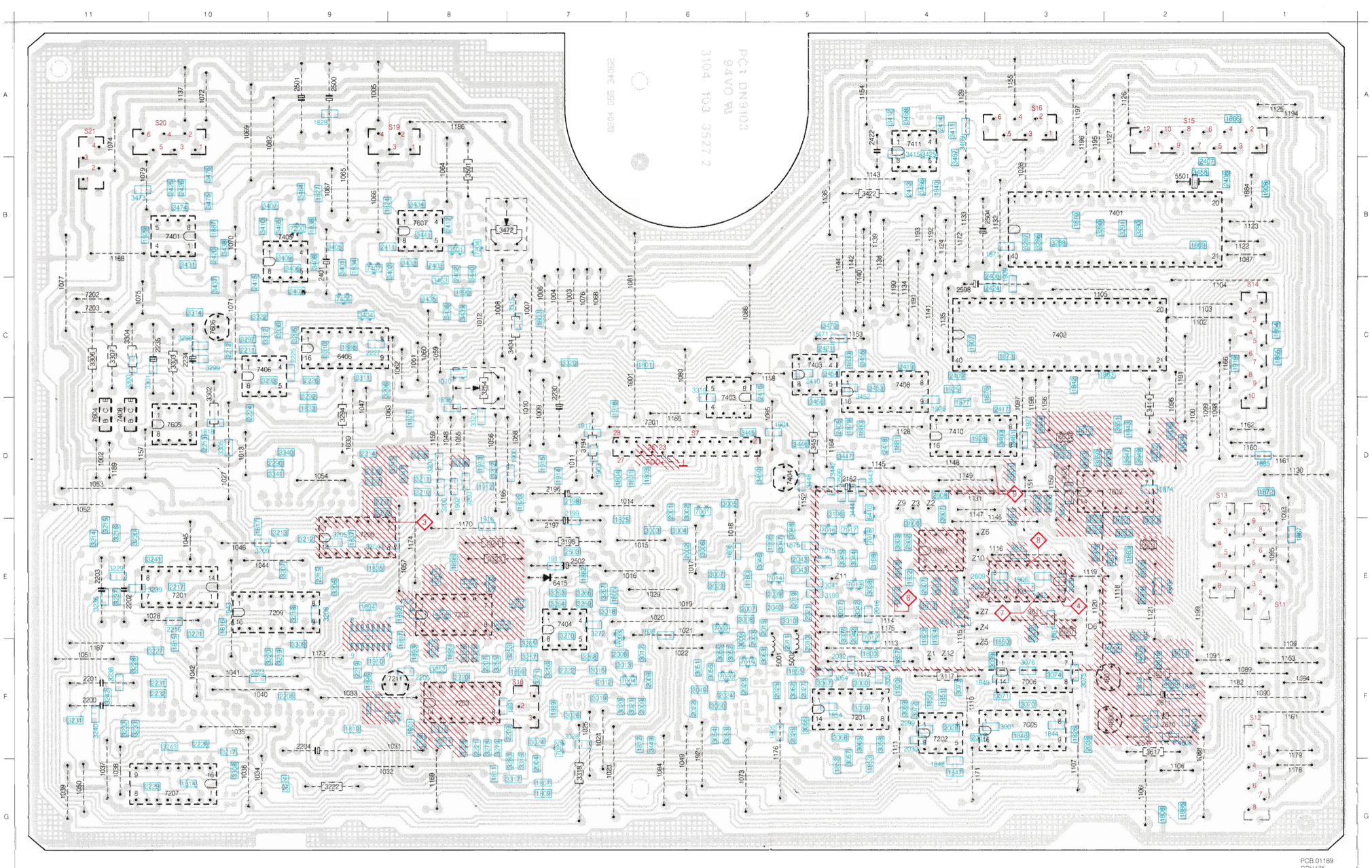
2236	D 6	2605	H 9	2611	E19	2624	F 9	3246	E 2	3325	D 4	3602	H15	3608	C14	3614	D18	3620	B20	3626	H10	3632	J 7	3638	H13	3644	G20	3671	F17	3683	F 9	3689	F12	4207	D 3
2237	C 7	2606	I 9	2612	D 9	2625	F 9	3247	B 2	3326	E 4	3603	E14	3609	D15	3615	D18	3621	E 9	3627	H10	3633	J 7	3639	B10	3645	B10	3672	G12	3684	E10	3690	E12	4208	F 3
2601	D10	2607	C14	2620	B10	2626	F13	3248	C 2	3327	D 7	3604	E10	3610	D16	3616	C19	3622	H 8	3628	H11	3634	J10	3640	E10	3652	B 9	3675	C11	3685	F11	3691	E12	4209	G 3
2602	E14	2608	D14	2621	A14	2627	F13	3250	C 7	3328	F 4	3605	E11	3611	C16	3617	B18	3623	H 8	3629	H12	3635	K10	3641	G19	3654	B19	3680	B13	3686	F10	3694	B12	4210	H 3
2603	D15	2609	J11	2622	C12	2628	F13	3323	A 4	3329	H 4	3606	E13	3612	C16	3618	C20	3624	H 8	3630	I 7	3636	I 11	3642	G19	3655	D19	3681	B14	3687	F12	4205	A 3	4603	C18

4604	D18	4611	I 11	6207	B 3	6602	K 9	6621	F16	7202B	C 2	7601B	C16	7604A	D12
4606	B19	4612	J11	6208	C 3	6603	K10	6625	E13	7202C	D 2	7602	H19	7604C	E16
4607	D19	4613	E10	6209	D 3	6604	G20	6626	E14	7202D	F 2	7602A	I 9		
4608	B20	4614	F11	6210	F 3	6606	B16	7050B	F14	7203B	G 2	7602B	J 7		
4609	B20	4615	E12	6211	G 3	6607	B16	7200A	D 7	7211	A 4	7603A	J12		
4610	H10	4616	H13	6601	D15	6620	G14	7202A	B 3	7601A	C13	7603B	K16		



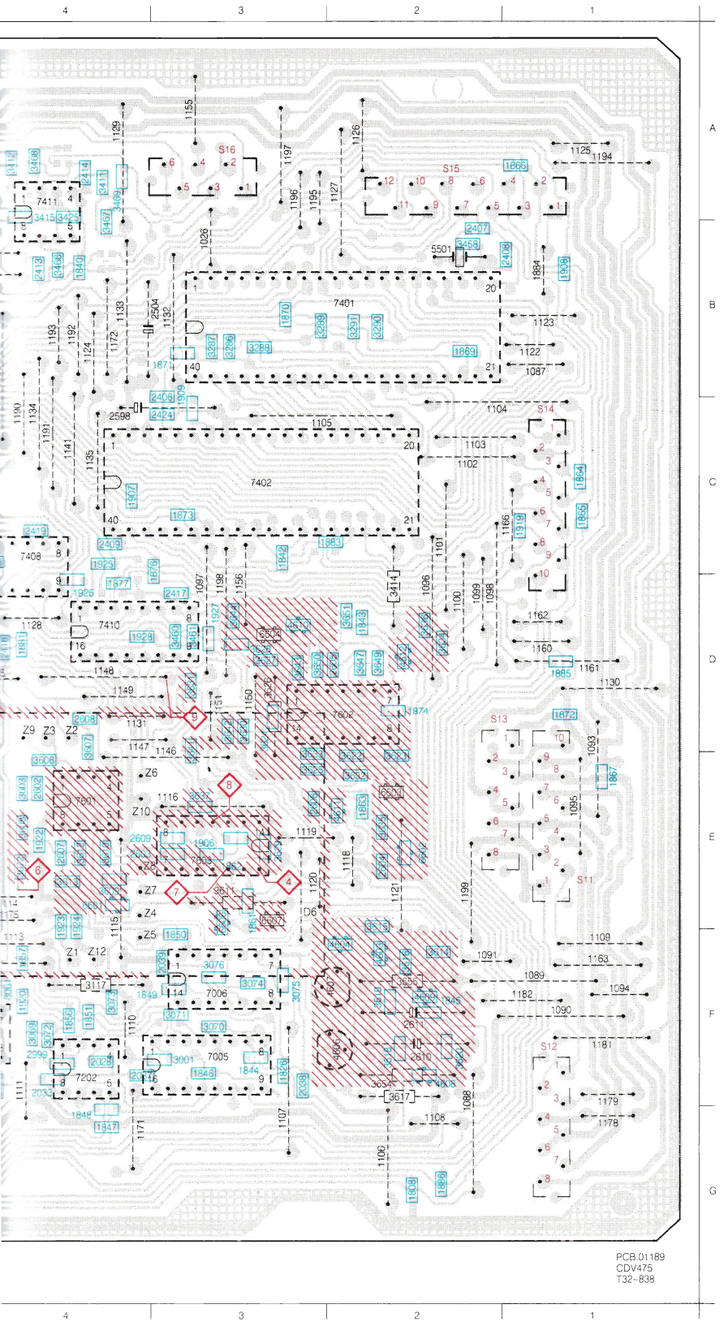
PRINT LAY-OUT SERVO IV



OVERL BEH BIJ PCB 01189

OVERL BEH BIJ PCB 01189

OVERL BEH BIJ PCB 01189



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1002	D11	1114	E 4	1836	D 8	2027	F 5	3028	F 7	3280	F 7	3606	E 4	7406	C 9				
1003	C 7	1115	E 4	1837	E 9	2028	F 4	3037	E 5	3286	B 3	3607	D 4	7406	C10				
1004	C 7	1116	E 4	1838	B 9	2032	F 5	3038	E 4	3287	B 3	3608	E 4	7407	B 9				
1005	A 9	1118	E 2	1839	E 6	2033	F 4	3039	E 5	3288	B 3	3609	E 4	7408	D11				
1006	C 7	1119	E 3	1840	B 4	2037	F 4	3040	E 5	3289	B 2	3610	E 4	7408	C 4				
1007	C 7	1120	E 3	1842	C 3	2038	F 3	3041	E 5	3290	B 2	3611	E 3	7410	D 4				
1008	C 8	1121	E 2	1843	D 2	2039	F 3	3042	E 5	3291	B 2	3612	E 4	7411	A 4				
1009	D 7	1122	B 1	1844	F 3	2042	E 5	3043	E 5	3292	C 9	3613	E 4	7601	E 4				
1010	C 8	1123	B 1	1845	F 2	2043	E 5	3044	E 5	3293	C10	3614	F 2	7602	D 3				
1010	D 7	1124	B 4	1846	F 3	2152	D 5	3045	E 5	3294	D 9	3615	E 2	7603	E 3				
1011	D 7	1125	A 1	1847	G 4	2196	D 7	3046	E 5	3295	C 9	3616	F 2	7604	D11				
1012	C 8	1126	A 2	1848	F 4	2197	E 7	3047	E 5	3296	C 8	3617	F 2	7605	D10				
1013	D10	1127	A 2	1849	F 4	2198	D 7	3048	E 5	3297	C10	3618	F 2	7606	C10				
1014	D 7	1128	D 4	1850	F 4	2199	D 7	3049	F 6	3298	C10	3619	F 2	7607	B 8				
1015	E 7	1129	A 4	1851	F 4	2200	F11	3050	F 6	3299	C10	3620	F 2						
1016	E 7	1130	D 1	1852	G 5	2201	F11	3051	F 6	3300	C11	3622	E 3						
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1093	D 1	1809	G 7	2001	D 6	2999	F 4	3247	D 8	3456	D 5	7201	F 5						
1094	F 1	1811	G 8	2002	E 6	3001	F 3	3248	D 8	3458	B 2	7201	D 6						
1095	E 1	1812	F 6	2003	E 5	3002	D 6	3250	D 9	3460	D 3	7201	E10						
1096	D 2	1814	G10	2004	G 7	3003	E 6	3252	F 8	3461	D 3	7202	F 4						
1097	D 3	1815	F10	2006	F 7	3004	E 6	3253	F 7	3463	C 8	7202	C11						
1098	D 2	1816	E10	2007	E 6	3005	D 6	3254	C 8	3464	B 9	7202	E 8						
1099	D 2	1817	E10	2008	F 6	3006	E 6	3255	F 8	3465	B 9	7203	C11						
1100	D 2	1818	D10	2009	F 6	3007	E 6	3256	F 7	3466	B 4	7203	F 8						
1101	C 2	1819	F 9	2010	F 5	3008	E 6	3257	F 7	3467	A 4	7204	B 8						
1102	C 2	1820	D 7	2011	F 5	3009	E 6	3259	E 7	3468	A 4	7207	G10						
1103	C 2	1821	D 8	2012	F 7	3010	E 5	3263	E 7	3469	A 4	7209	E10						
1104	C 2	1824	B 8	2015	E 5	3012	F 6	3264	E 7	3470	C 5	7211	F 9						
1105	C 3	1825	E 7	2016	E 4	3013	F 7	3265	E 7	3471	C 5	7211	E 9						
1106	G 2	1826	F 3	2017	E 5	3015	F 7	3266	E 7	3472	B 8	7401	B10						
1107	G 3	1827	B 9	2019	E 5	3018	E 7	3267	E 7	3473	B11	7401	B 3						
1108	G 2	1828	A 9	2021	E 5	3019	F 7	3268	F 7	3474	B10	7402	C 3						
1109	F 1	1830	C 5	2022	F 6	3020	F 7	3270	E 7	3475	B10	7403	D 6						
1110	F 4	1831	D 6	2023	F 5	3021	F 6	3271	F 7	3476	B10	7403	C 5						
1111	F 4	1833	D 9	2024	F 6	3023	E 6	3272	E 7	3501	B 8	7404	E 7						
1112	F 5	1834	B 9	2025	F 5	3024	F 7	3278	F 8	3501	B 8	7404	D 5						

OVERL BEH BIJ PCB 01189

OVERL BEH BIJ PCB 01189

OVERL BEH BIJ PCB 01189

SERVOPANEL PARTSLIST

4822 122 31797	22NF 10% 63V
4822 121 51154	3N9 1% 160V

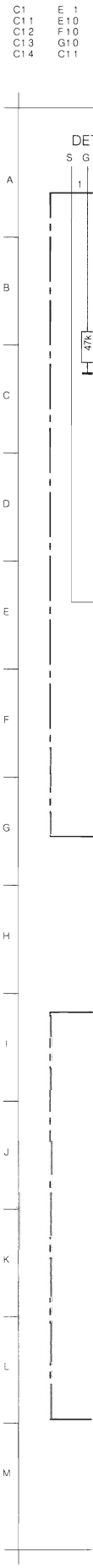
4822 111 30483	1R0
4822 111 30508	10R
4822 111 30492	2R2
4822 111 30537	120R
4822 111 30593	3R3
4822 101 10685	TRIMMING POTENTIOMETER 4K7

4822 130 42353	BFS19
4822 130 41982	BC848B
5322 130 44339	BFS19R
4822 130 42131	BF550
5322 130 41983	BC858B
4822 130 41024	BF245B
5322 130 44647	BC368
4822 130 40824	BD136
4822 130 40823	BD135
4822 130 40937	BC548B
4822 130 44283	BC636
5322 130 44349	BC635

5001	4822 157 53651	COIL 26.5µH
5002	4822 157 53469	COIL 44.0µH
5501	4822 242 71845	X-TAL 12 MHZ

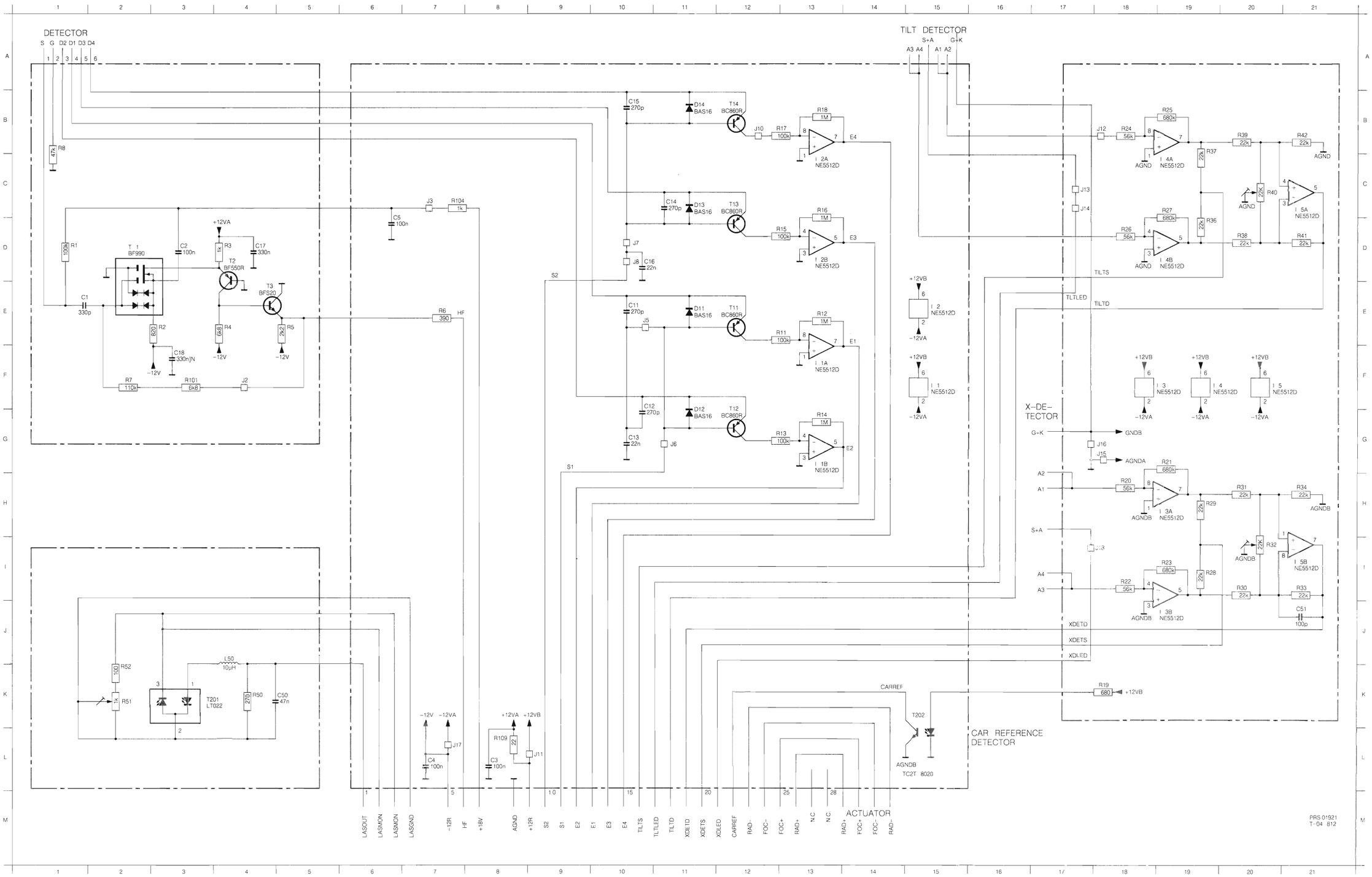
4822 130 32861	HZ2C2 (2V4)
5322 130 80214	BAS28
5322 130 31928	BAS16
4822 130 32699	HZ12B3 (13V0)
4822 130 33703	BZX84-C2V
5322 130 31937	BZX84-C4V
4822 130 32566	HZ11A3 (10V0)
4822 130 80125	BZX84-C5V6
4822 130 80422	HZ18-3 (18V0)

4822 209 80631	LM339N
4822 209 80797	LM393N
5322 209 10576	MC14053BCP
4822 209 11563	MC14025BCP
4822 209 81451	NE5514N
4822 209 70672	LM358N
4822 209 81349	MC1458P1
4822 209 80629	TCA240
4822 214 51664	THICK FILM SERVO
4822 209 11564	TEA1015T/C1
4822 209 11747	MAB8051AHP/P126
4822 209 72028	PD 8155
4822 209 81349	MC1458P1 (MTLA)
4822 209 70672	LM358N (NSC)
5322 209 10421	MC14094BCP
4822 209 10248	HEF4013BP



CIRCUIT DIAGRAM FLEXPRINT

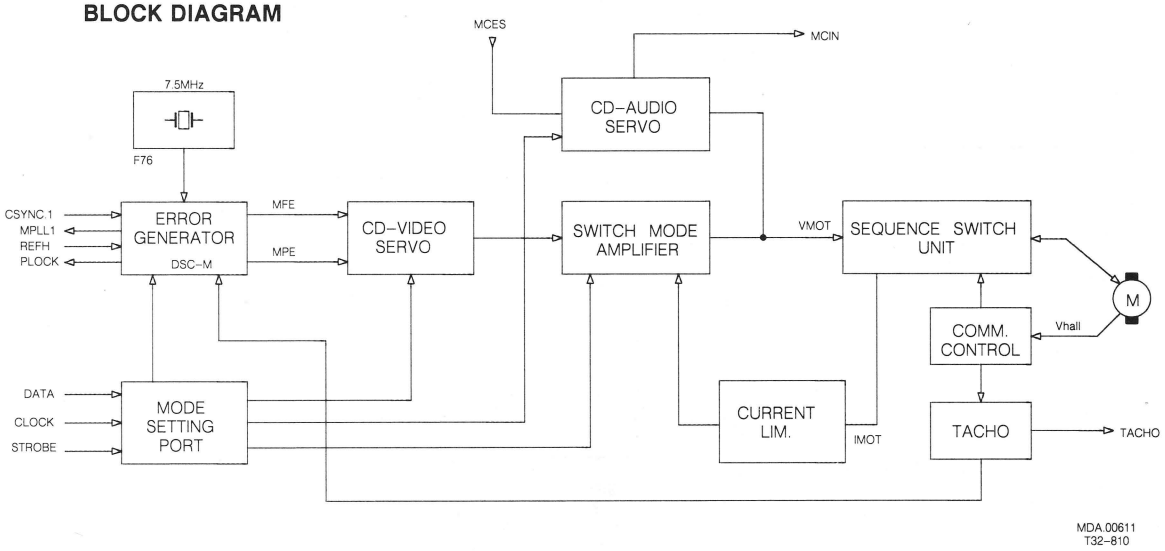
C1	E 1	C15	B10	C3	L 8	D11	E11	I 1A	F13	I 3	F19	I 4B	D19	J11	L 9	J16	G18	J5	E10	R1	D 1	R12	E13	R17	B13	R21	G19	R26	D18	R30	I 20	R36	D19	R40	C20	R51	K 2	T 1	D 2	T2	D 4
C11	E10	C16	D10	C4	L 7	D12	G11	I 1B	G13	I 3A	H19	I 5	F20	J12	B18	J17	L 7	J6	G11	R101	F 3	R13	G13	R18	B13	R22	I 18	R27	C19	R31	H20	R37	B19	R41	D21	R52	K 2	T11	E12	T201	K 4
C12	F10	C17	D 4	C5	C 7	D13	C11	I 2	E15	I 3B	J19	I 5A	C21	J13	C17	J18	I 18	J7	D10	R104	C 7	R14	G13	R19	K18	R23	I 19	R28	I 19	R32	I 20	R38	D20	R42	B21	R6	E 7	T12	F12	T202	K15
C13	G10	C18	F 3	C50	K 5	D14	B11	I 2A	C13	I 4	F20	I 5B	I 21	J14	C17	J2	F 4	J8	D10	R109	L 8	R15	D13	R2	E 3	R24	B18	R29	H19	R33	I 21	R39	B20	R5	E 5	R7	F 2	T13	C12	T3	E 4
C14	C11	C2	D 3	C51	J21	I 1	F15	I 2B	D13	I 4A	C19	J10	B12	J15	G18	J3	C 7	L50	J 4	R11	E13	R16	C13	R20	H18	R25	B19	R3	D 4	R34	H21	R4	E 4	R50	K 4	R8	B 1	T14	B12		



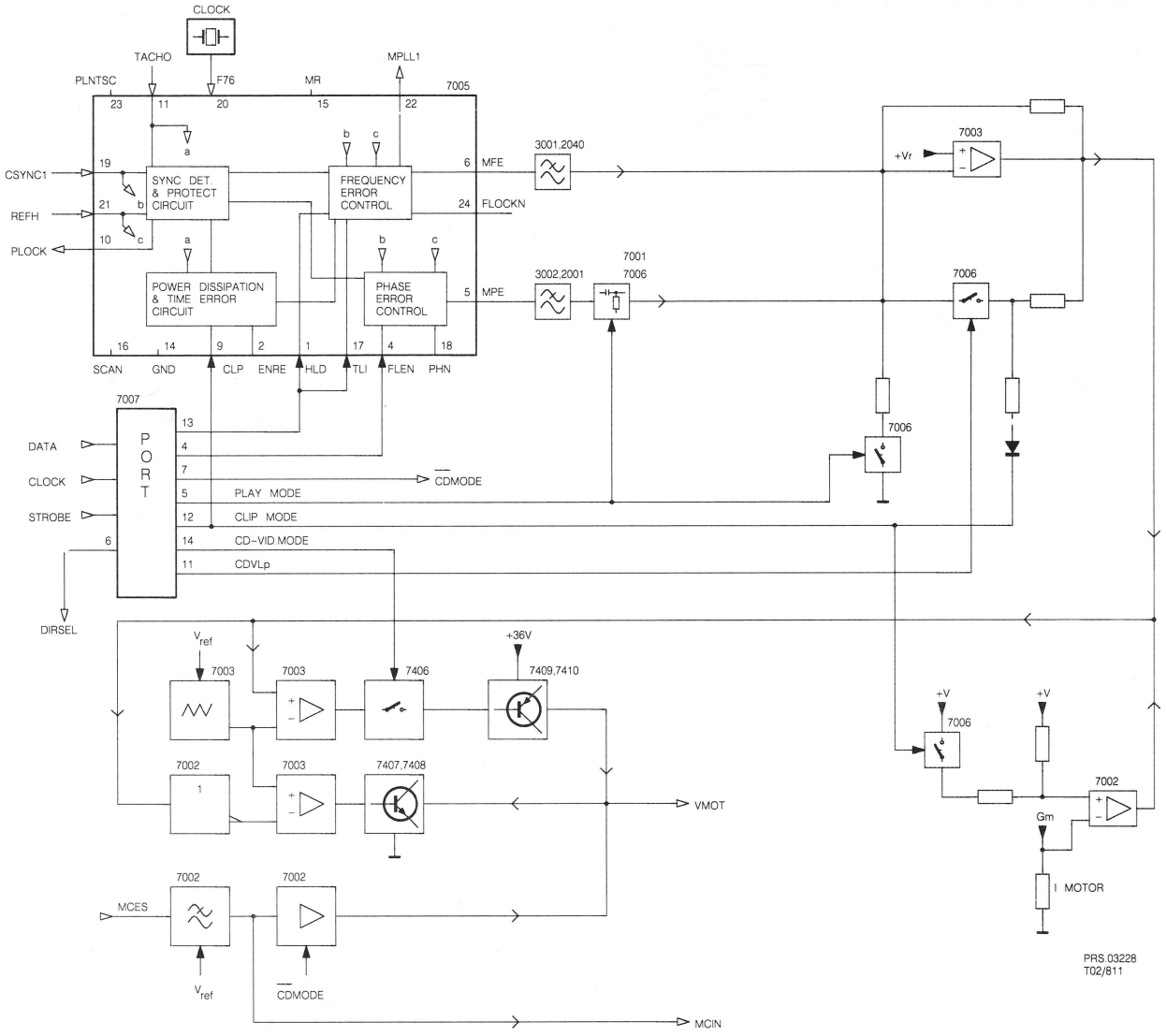
12 MOTOR CONTROL SECTION

MOTOR CONTROL

BLOCK DIAGRAM

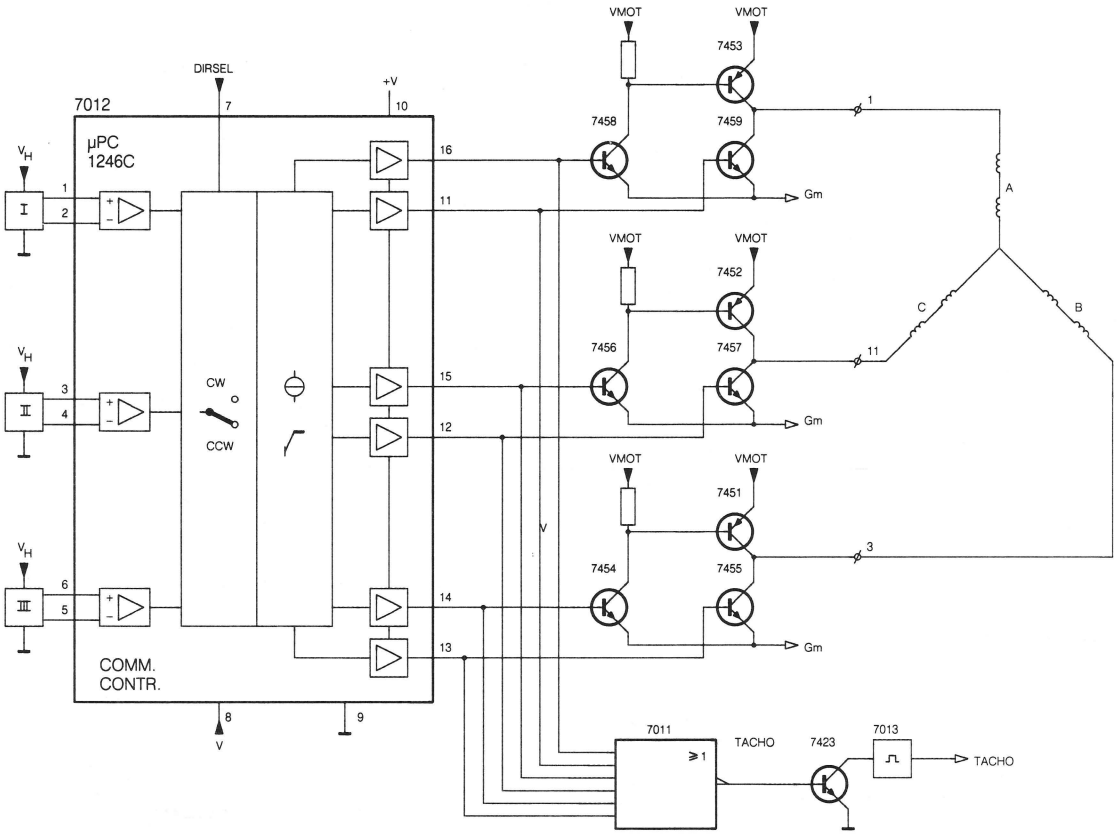


MOTOR I BLOCK DIAGRAM



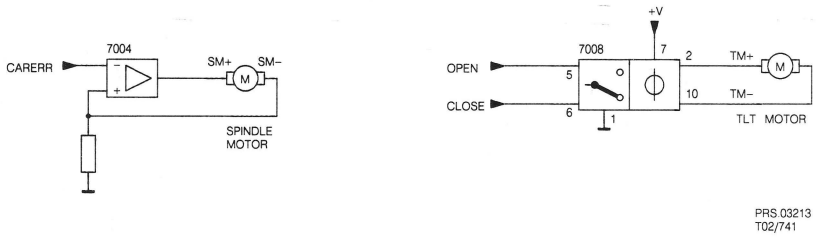
MOTOR II BLOCK DIAGRAM

MOTOR 2 BLOCKDIAGRAM



PRS.03214
T02/811

MOTOR 3 BLOCKDIAGRAM



PRS.03213
T02/741

CIRCUIT DIAGRAM MOTOR I

SERVO PANEL
VIDEO 1 PANEL
SERVO PANEL
TURNTABLE MOTOR
7005 DSC-M
PHASE ERROR CONTROL
SYNC DET. & PROTECT CIRQUIT
POWER DISSIPATION & TIME ERROR CIRQUIT
FREQUENCY ERROR CONTROL
7012 µPC1246C
ROTATORY DIRECTION SWITCH
CURRENT SWITCH
CURRENT LIMITER
COMP P=Q
7007 HEF4094B
7006-A HEF4066
7006-B HEF4066
7006-C HEF4066
7006-D HEF4066
7001-A NE5512
7001-B NE5512
7002-A NE5514
7003-A LM339
7003-B LM339
7003-C LM339
7011 HEF4086
7014 74HC00
PHASE C 10MO15
PHASE B 2MO15
PHASE A 12MO15
TURNTABLE MOTOR

MOTOR 1

SWITCH POS 7006
5,6,12,13 = L

TURNTABLE MOTOR

PRS.03230
T32-838

	2001	F10	6205	J18
	2002	F12	6206	N 9
	2005	E10	6207	N13
	2010	E17	6208	N18
	2011	E17	7001	E11
	2012	E19	7001	E14
A	2014	C26	7002	G17
	2015	D27	7002	C28
	2016	E29	7002	C26
	2017	C29	7002	B29
	2025	D15	7003	D20
	2026	F15	7003	E18
	2027	C29	7003	G19
	2028	D29	7005	E 5
	2029	G20	7006	F12
B	2033	A10	7006	F14
	2035	J25	7006	H13
	2036	A 4	7006	A 9
	2038	F22	7007	A 3
	2040	G11	7011	I 20
	2043	A 3	7012	J 4
	2044	D 5	7013	J25
	2045	C21	7014	D 7
	2050	E 6	7405	G18
C	2051	D 8	7406	D21
	2052	D 6	7407	G21
	2053	J 3	7408	G21
	2054	K 3	7409	D22
	2055	L 3	7410	D23
	2056	M 3	7411	D29
	2057	I 6	7423	K23
	2058	N10	7451	J 9
	2059	N14	7452	J13
	2060	N18	7453	J17
D	2061	J18	7454	N 7
	2064	I 26	7455	N 9
	2065	L22	7456	N11
	2075	I 21	7457	N13
	2100	F19	7458	N15
	3001	G10	7459	N17
	3002	E10		
	3003	E10		
	3004	D11		
	3005	F11		
E	3006	E11		
	3007	F16		
	3008	G13		
	3009	E13		
	3010	G15		
	3012	H14		
	3013	F16		
	3014	B30		
	3016	E 5		
F	3017	H13		
	3018	G15		
	3019	C 5		
	3021	G19		
	3034	E17		
	3035	F17		
	3036	F17		
	3037	G17		
	3037	F24		
	3038	H16		
G	3039	H17		
	3040	G18		
	3041	F18		
	3042	F17		
	3043	E18		
	3044	E18		
	3045	D16		
	3046	D20		
	3047	G20		
H	3048	G21		
	3049	C22		
	3050	C22		
	3051	C24		
	3052	C24		
	3053	E23		
	3054	D25		
	3055	C25		
	3056	C26		
	3058	D27		
I	3059	D27		
	3060	E28		
	3061	E29		
	3063	B28		
	3065	B29		
	3066	B31		
	3067	B30		
	3068	C30		
	3070	H21		
J	3075	C28		
	3081	B 5		
	3092	C 5		
	3140	K24		
	3141	L22		
	3142	L23		
	3143	D30		
	3144	D 6		
	3145	D 7		
	3147	J25		
K	3150	G19		
	3201	J 2		
	3201	I 5		
	3203	I 8		
	3204	I 12		
	3205	I 16		
	3216	N 7		
	3217	N 8		
	3218	N 9		
	3219	N 9		
L	3220	N10		
	3221	N12		
	3222	N12		
	3223	N14		
	3224	N15		
	3225	N16		
	3226	N17		
	3227	N17		
	3228	N18		
M	3229	D30		
	3230	M 3		
	3233	N12		
	3234	N11		
	3235	K 7		
	3236	M 7		
	3237	L 7		
	3505	A 3		
	5001	E24		
N	5002	D 7		
	6001	E12		
	6002	F18		
	6003	E22		
	6004	E12		
	6005	G22		
	6006	E24		
	6007	E28		
	6008	B27		
	6009	G15		
O	6011	E 5		
	6012	A 2		
	6015	E25		
	6021	D29		
	6045	E16		
	6203	J 9		
	6204	J13		

PRINT LAY-OUT MOTOR I

1002 D10 1022 C 7 1045 C 9 1065 B 5 1105 B 3 1316 D 4 1366 C 1 2002 C 6 2021 B 4 2041 A10 2057 C 9 3005 C 7 3019 A 8 3037 D10 3051 B10 3068 B 9 3140 B 7 3218 B 9 3234 B 8 3309 B 7 3323 B 9 3357 D 1 6009 C 8 6301 A 9 7013 A 4 7451 B 8 M017 C 1
1005 D 9 1023 A 5 1046 B 9 1089 B11 1106 B 4 1318 D 4 1368 D 1 2005 C 6 2025 C 6 2042 A10 2058 A 8 3006 C 6 3021 B10 3038 C10 3052 B 9 3070 D 9 3141 B 8 3219 B 9 3235 B 9 3310 C 8 3324 C 9 3358 C 1 6010 B 3 6401 D 3 7014 B 2 7452 B 7 M018 C 5
1006 D 8 1027 C 4 1047 B 9 1090 B 9 1107 C 4 1319 B 3 1381 A 9 2006 B 4 2026 C 6 2043 A 5 2059 A 7 3007 C 8 3022 C 3 3039 C10 3053 A10 3071 C 4 3142 B 8 3220 B 8 3236 A 8 3311 B 7 3325 B 6 3359 C 2 6011 C 5 7001 C 6 7401 A 8 7453 B 6 M019 A 1
1006 C 9 1028 D 3 1048 C 9 1091 B 9 1108 B 4 1320 C 3 1391 D 4 2007 C 4 2027 D10 2044 C 6 2060 A 6 3023 B 3 3040 C11 3054 C10 3072 B 4 3143 A 9 3221 A 8 3237 B 7 3312 B 8 3326 A 9 3360 C 1 6012 A 5 7002 C10 7403 C 4 7454 B 8 M019 C 5
1008 C 9 1029 D 3 1049 B 8 1092 B10 1109 B 3 1321 D 4 1393 A 4 2008 B 5 2028 D10 2045 B10 2061 A 6 3009 C 7 3024 C 3 3041 B10 3055 D10 3073 B 5 3144 B 2 3222 A 8 3238 D 9 3313 D11 3327 C 5 3463 C 1 6015 C11 7003 B11 7404 C 5 7455 A 8 M020 D 3
1009 A 7 1032 C11 1050 B 8 1093 B 9 1110 D10 1328 B 5 1394 B 5 2009 B 4 2029 C11 2046 C 6 2062 C 1 3010 C 8 3025 C 2 3042 B11 3056 C10 3075 C11 3145 B 2 3223 B 7 3242 B11 3314 A10 3328 A10 5001 A11 6020 B 4 7004 C 4 7405 B10 7456 A 8 M021 D 2
1011 D 7 1032 C10 1051 C 8 1093 C 6 1120 B 6 1330 A 4 1395 B 5 2010 B11 2030 C 4 2049 D10 2063 C 2 3011 D 8 3026 C 2 3043 B11 3058 C10 3081 B10 3146 D 3 3224 B 7 3301 C11 3315 A 9 3329 D11 6001 C 7 6021 C11 7005 B 6 7406 B10 7457 A 7
1012 D 6 1034 C10 1054 D 7 1096 A 6 1124 D 5 1331 B 2 1396 B 5 2011 C11 2031 C 4 2050 C 1 2064 A 3 3012 C 8 3029 C 4 3044 B11 3059 C10 3092 A 7 3147 A 4 3225 A 7 3302 D10 3316 A 9 3331 B 7 6002 B10 6045 D 6 7006 C 7 7407 C10 7458 B 7
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1018 D 9 1037 B10 1057 B 7 1098 D 7 1303 B 2 1351 D 8 1402 D 7 2013 A 3 2035 A 4 2052 B 2 2066 D 2 3014 D 8 3031 B 4 3046 B10 3061 C11 3094 B 3 3203 B 8 3227 A 7 3304 C 7 3318 C 7 3352 C 2 6004 C 7 6204 B 7 7008 C 3 7409 A10 M011 D11
1019 C 6 1040 C 9 1058 B 7 1099 B 7 1310 C 3 1353 C 3 1404 D10 2014 C10 2036 A 5 2053 C 9 3001 C 7 3015 A 5 3032 B 3 3047 B11 3063 C10 3093 B 4 3204 B 8 3228 A 6 3305 C 8 3319 C 7 3353 C 2 6005 B10 6205 B 6 7009 C 2 7410 B10 M012 D10
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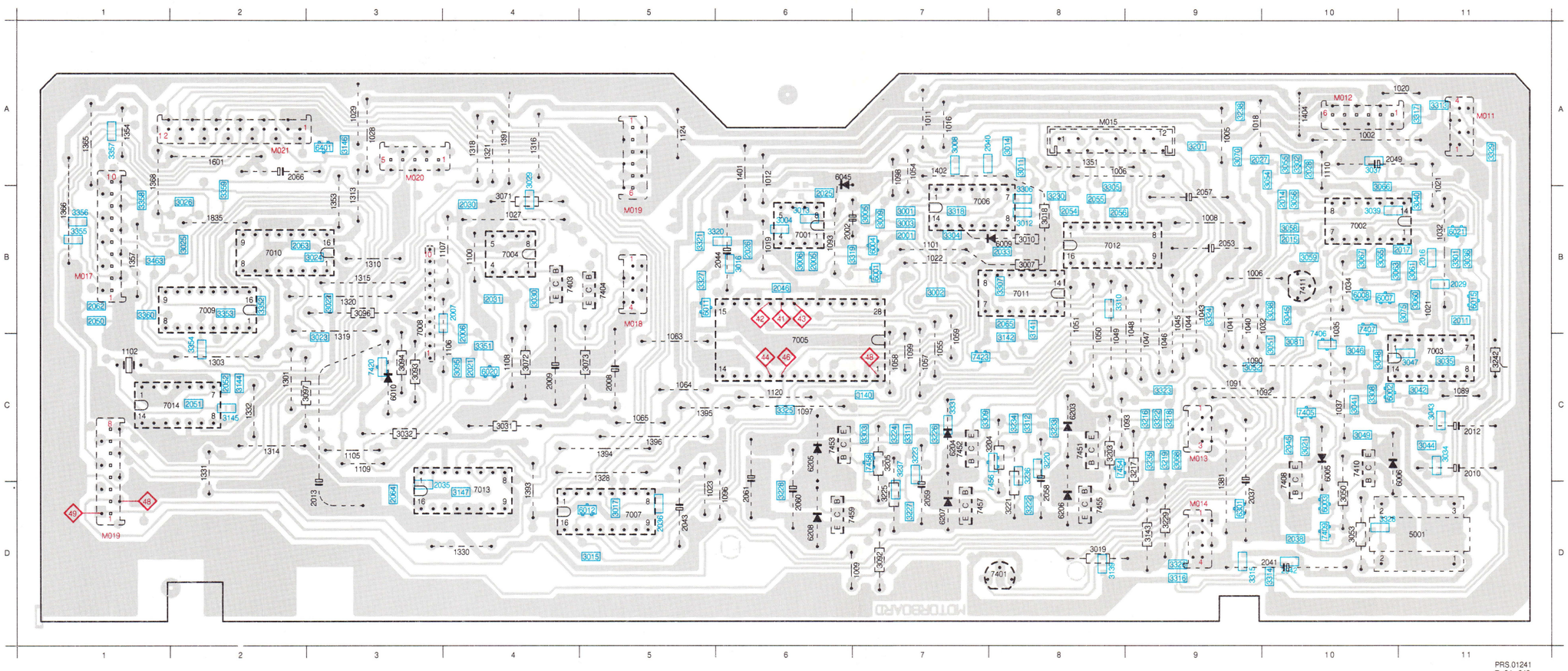
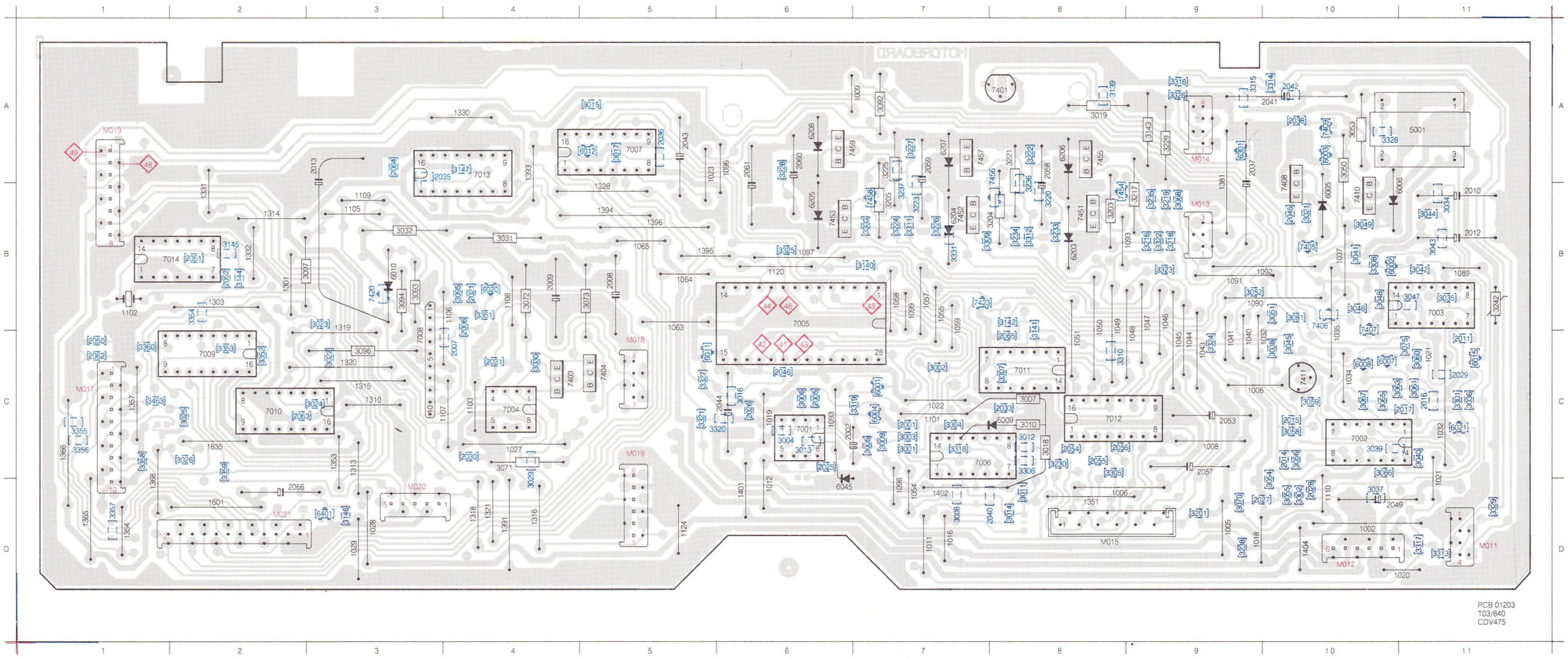


PRINT LAY-OUT MOTOR II



MOTOR PANEL PARTSLIST

Capacitors

4822 124 41557	ELCAP.BIP.2U2
4822 122 32442	10NF 50V
4822 122 31974	820PF 10% 50V
5322 122 31849	39NF 10% 63V
4822 122 33011	470 NF
4822 122 33156	100NF 63V
5322 122 32933	1NF 5% 50V
4822 124 22221	100UF 20% 63V

Resistors

4822 111 30517	22E 5% 0.33W
4822 111 30528	56E 5% 0.33W
4822 111 90182	390K 2% 0.125W
4822 111 30513	15E 5% 0.33W
4822 111 30492	2E2 5% 0.33W
4822 111 30508	10E 5%
4822 111 30544	220E 5% 0.33W
4822 111 30519	27E 5%
4822 111 30483	1 5% 0.33W

Diodes

	5322 130 31928	BAS16
	4822 130 31982	BYV27-100
	4822 130 30621	1N4148
	4822 130 33004	BZX84-B5V6
	4822 130 31983	BAT85
	4822 130 80542	BZX84-C33
	4822 130 32699	HZ12B3 (13V)
	5322 130 32026	HZ12B2

ICs

7001	4822 209 72123	NE5512N
7002	4822 209 81451	NE5514N
7003	4822 209 80631	LM339N (MTLA)
7004	4822 209 81349	MC1458P1 (MTLA)
7005	4822 209 72121	DSC-M/GS38FC307PA02
7006	5322 209 10357	HEF4066BP
7007	5322 209 10421	MC14094BCP
7008	4822 209 82059	BA6109
7009	5322 209 10421	MC14094BCP
7010	4822 209 72423	MC14021BCP
7011	4822 209 10311	HEF4086BP
7012	4822 209 72126	UPC1246C
7013	4822 209 10866	MC14528BCP
7014	5322 209 11105	PC74HCT00P

Miscellaneous

5001	4822 157 53196	
5002	4822 242 72046	X-TAL 7.5 MHZ

Transistors

4822 130 40937	BC548B
4822 130 40824	BD136
4822 130 40823	BD135
5322 130 41982	BC848B
4822 130 60511	BC847B
4822 130 40982	BD437
5322 130 60508	BC857B
4822 130 40995	BD438
4822 130 40855	BC337
5322 130 41983	BC858B
5322 130 44647	BC368

CIRCUIT DIAGRAM MOTOR II

XX = ADDITIONAL P.C.B

7004 MC1458P1(MTCA)

7013 MC14528BCP

7014 74HC00

POWER SUPPLY 6S20 — 2P6 3MO11 — 1MO12 — +36V — 3242 1to-2E3 PTC25 — +36VR

SERVO 3 2S20 — 5MO12

3S20 — 4MO12 — −12V

1S20 — 6MO12 — +5V

μ PROCESSOR 2U13 — 9MO17

XX: 7460 BC368 — 3241 1 — +14V — +12VR — 3240 390 — 2070 150μ — 6302 HZ12B3-13V

5S20 / SERVO 3 4S20 / 2S20 — 2MO12 / 3MO12 / 5MO12

POWER SUPPLY 4P6 — 4MO11

μ PROCESSOR 1U13 — 10MO17

FRONT 1F11 / 3F11 — 4MO14 / 2MO14 — FIL2

POWER SUPPLY 3P6 / 4P6 — 2MO11 / 1MO11 — FIL1

FRONT 2F11 — 3MO14

AUDIO 4A4 — 5MO16

SERVO 3 6S15 — 7MO21 — MUTA/ANDIG

μ PROCESSOR 8U13 — 3MO17

SERVO 3 7S15 — 6MO21 — COM2

μ PROCESSOR 9U13 — 2MO17

SERVO 3 8S15 — 5MO21 — COM1

μ PROCESSOR 10U13 — 1MO17

SERVO 3 9S15 — 4MO21 — ACKN

STANDBY P — 4MO17 — 7U13 — μ PROCESSOR

RESET — 1MO21 — 12S15 — SERVO 3

3MO21 — 10S15

2MO21 — 11S15

+5V — 2066 10μ — 6401 BAS16 — 3146 7k5

+36V — 3139 820 — 7401 BC548B — 6301 BZX84 33V — +32V — 1MO14 — 4F11 — FRONT

CLAMP — 1MO19 — 2MO19 — 3MO19 — 4MO19 — 5MO19 — 6MO19 — LOADING

SHIFT CLK — 8MO17 — 3U13

DATA IN — 6MO17 — 5U13 — μ PROCESSOR

TILT+ — 4MO20

TILT− — 5MO20

OUT EN — 5MO17 — 3S16 — 2S16 — SERVO 3

DATA OUT — 7MO17 — 6U13

OUTPNH — 10MO17 — 4U13 — 1U13 — μ PROCESSOR

7009 HEF4094BP

8-STAGE SHIFT REGISTER

8-BIT STORAGE REGISTER

3-STATE OUTPUTS

7010 HEF4021BP — SHIFT REGISTER 8-BITS

3062 22n — 3063 22n — 3022 11k — 3024 10k

3096 22k — OPEN — 3097 22k — CLOSE

FORWARD OR REVERSE CIRCUIT

7008 BA6109

2007 10n — 2013 470μ — 6010 BYV27 — 3093 — 7420 BC858B — 3094

6020 BZX84/5V6 — 2021 1n — 100 — 3095

SERVO 3 — 5S16 — 4S16 — 2MO20 — 1MO20 — CARRER

MOTOR 2

+14V — 3032 22 — 3073 262 — 2008 100μ — 7404 BD135 — 7403 BD136 — 3072 262 — 3031 22 — 2009 100μ — 2030 22n — 2031 22n — 2003 56n — 3030 12k — 3029 12k — 7004 MC1458P1 — 3071 15 — SM+ 1MO18 — SM− 2MO18 — LOADING SPINDLE MOTOR

TM+ 3MO18 — TM− 4MO18 — 2006 22μ — LOADING TRAY/ TILTMOTOR

ATSB 8MO16 — 1A4

MUTL 7MO16 — 2A4

MUTR 6MO16 — 3A4 — AUDIO

TLEDON 6MO20 — 1S16 — SERVO 3

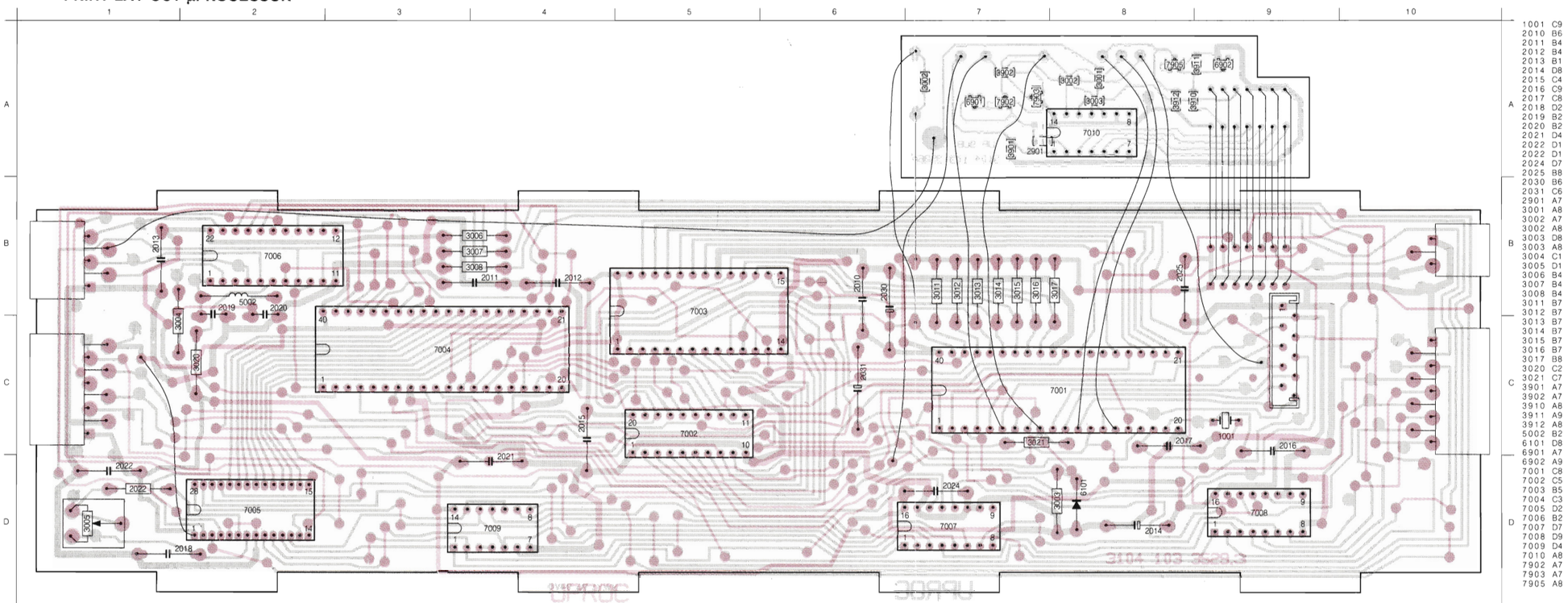
N.C. 3MO16 — 5A4

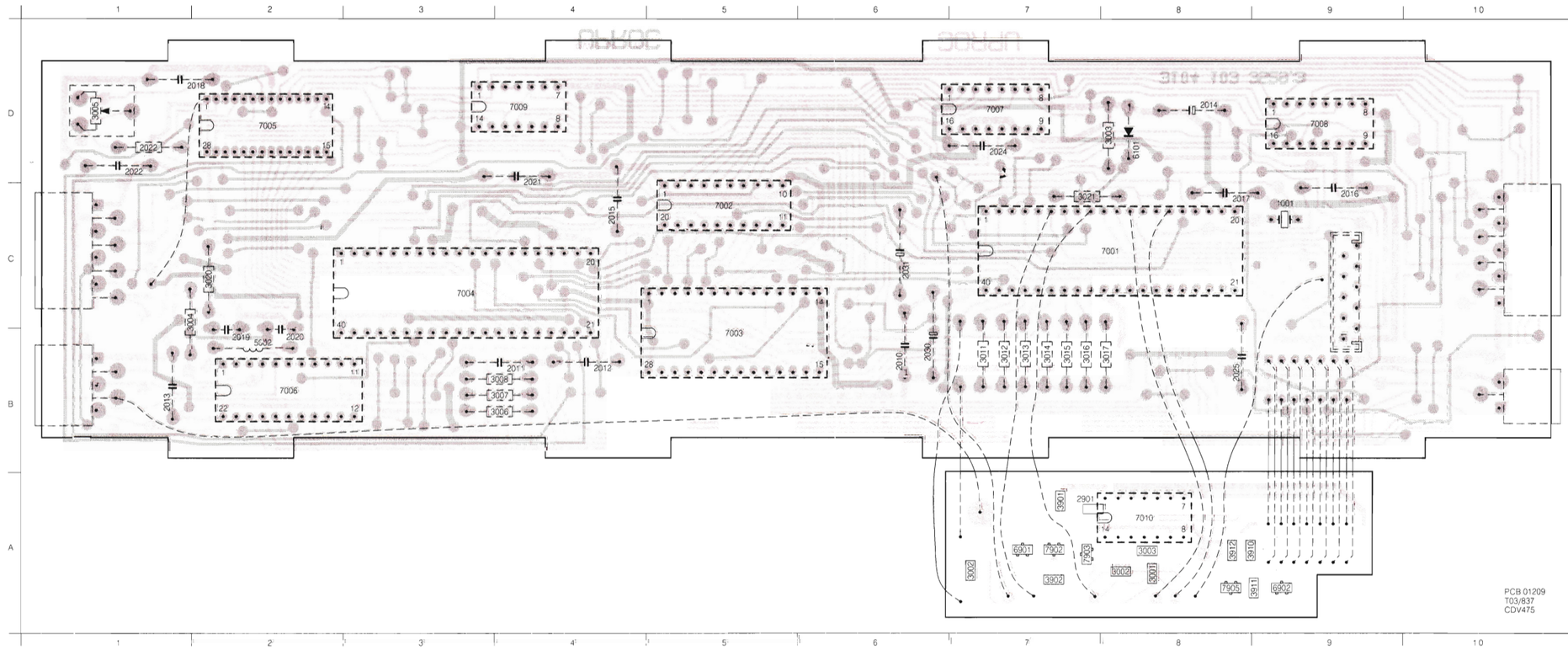
N.C. 4MO16 — 6A4 — AUDIO

PRS.03275
T−08 838
CDV475

13. CONTROL AND DISPLAY AND CONNECTION SECTION

PRINT LAY-OUT μPROCESSOR





CIRCUIT DIAGRAM µPROCESSOR

** ADDITIONAL PCB

µ.P PANEL

+5VSB
2012 22n
MEMORY
OUTPUT PORT
D0 D1 D2 D3 D4 D5 D6 D7
7004 MU8155
+5V
2011 22n
V_{CC}
MEMORY
PORT A
PORT B
PORT C
A0 A1 A2 A3 A4 A5 A6 A7
B0 B1 B2 B3 B4 B5 B6 B7
C0 C1 C2 C3 C4 C5
OUTPUT PORT
CONTROL & TIMING
I/O-M RES ALE RD WR
7005 MN1297Z
+5V
2022 22n
V_{DD}
HSYNC
VSYNC
CHARACTER SIZE CONTROL
HOR/VERT DISPLAY LOCATION CONTROL
BLANK CONTROL
BLINK CONTROL
ADDRESS CONTROL
TIMING GENERATOR
DISPLAY CONTROL
CHARACTER GENERATOR
SHIFT REGISTER
DATA MEMORY FOR DISPLAY
OUTPUT LATCH
CLOCK GENERATOR
OSC1 OSC2 V_{SS} TST
3005 1k
3022 1k
2018 39p
DA0 DA1 DA2 DA3 DA4 DA5 DA6 DA7 DA8 DA9 DA10 LDI ADM
VOB VO0 VO1 VO2
DO3 DO0 DO1 DO2
7006 PD0011
+5V
2013 22n
$\overline{CSB}$
$\overline{ATN}$ TX/$\overline{RX}$ $\overline{STB}$ $\overline{AKN}$
INTERFACE
I/O
I/O0 I/O1 I/O2 I/O3
TIMING GENERATOR
$\overline{VSYNC}$ $\overline{HSYNC}$ OSCTEST
24 BITS DECODER
DATA
CONTROL REGISTERS
DATA RAM
CLOCK
XIN XOUT V_{SS}
3020 10k
$\overline{IRQ}$
3004 1k
5001 120µH
2019 22p
2020 39p
+5V
3006 1k
3007 1k
3008 1k
+5VSB
2025 22n
+5V
2021 22n
7010 74LS04
7009 74LS32N
2024 22n
7007 74LS157N MUX
2014 22n
7008 74LS157N MUX
G1 EN
3029 20k
$\overline{VSYNC}$ 4U14 6V11
$\overline{HSYNC}$ 3U14 7V11
CHAR-BL 5U14 5V11
COMP-BL 9U14 1V11
INTVID 2U14 8V11
1U14 9V11
R-CHAR 8U14 2V11
G-CHAR 7U14 3V11
B-CHAR 6U14 4V11
TO VIDEO2 PANEL
RESET(DISPLAY) 5U15 4F12
TO FRONT PANEL
VMANCH 2U11 4V22
HMANCH 3U11 3V22
1U11 5V22
TO VIDEO1 PANEL
CL-VID 5U11 1V22
RESET 1U13 10M07
TO MOTOR PANEL
CLV-SCAN 4U11 2V22
TO VIDEO1 PANEL

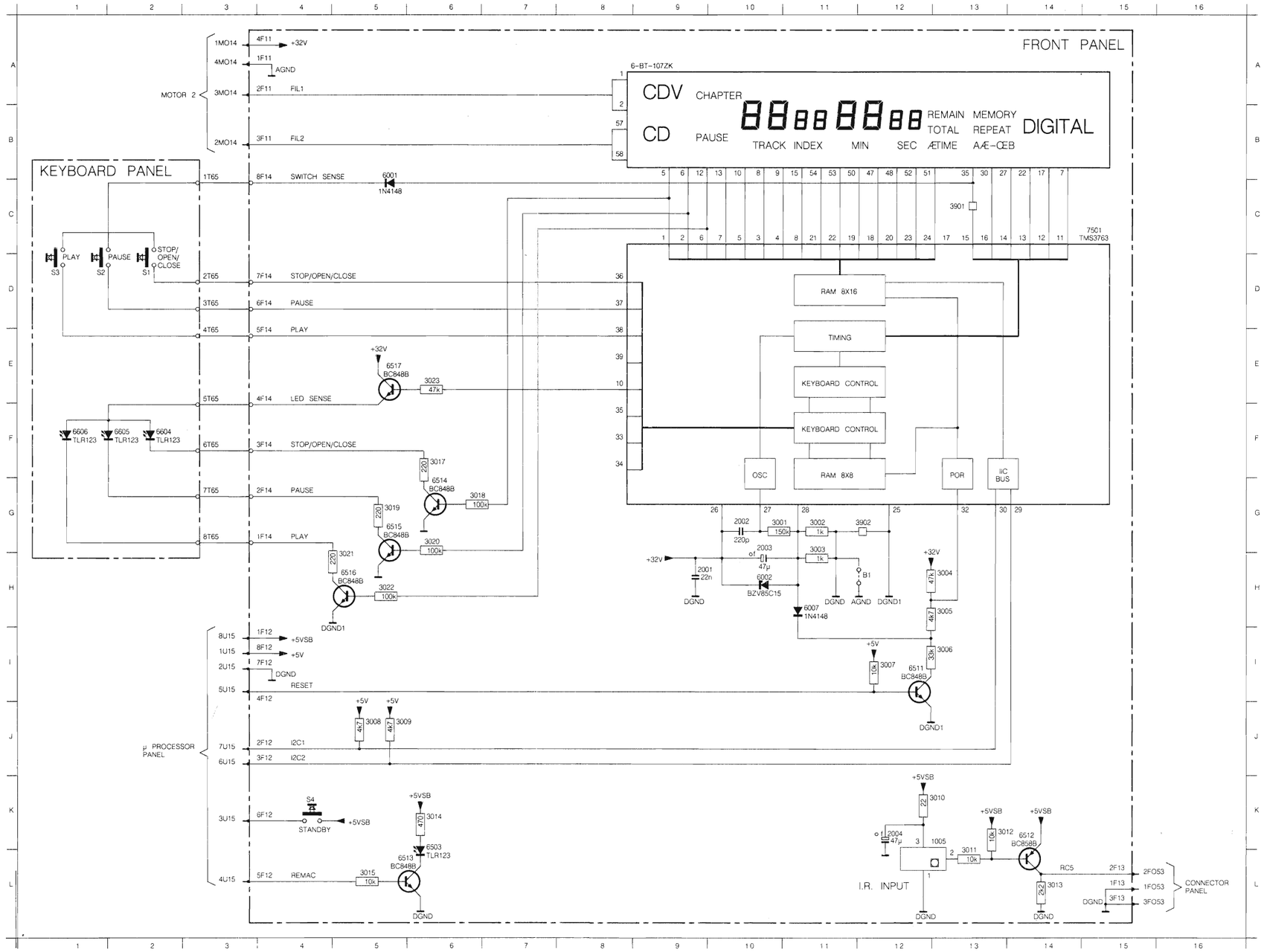
2010 A 5
2011 C18
2012 A14
2013 I 25
2014 E31
2015 D12
2018 I 22
2019 Q23
2020 Q23
2021 C29
2022 B23
2024 E29
2025 C27
2030 A 6
2031 F 8
2901 J 5
3003 G 8
3004 N23
3005 H23
3006 J 27
3007 J 28
3008 J 28
3010 D10
3011 D10
3012 D10
3013 D 9
3014 D 9
3015 D 9
3016 D 9
3017 D 9
3020 L21
3022 H23
3029 I 30
3901 J 4
3902 A 3
3910 E 2
3911 E 3
3912 E 3
5001 N23
6101 G 8
6901 J 6
6902 J 7
6903 A 2
6904 E 3
6905 E 3
7001 B 4
7002 D11
7003 B12
7004 C17
7005 B22
7006 J 22
7007 E29
7008 F30
7009 D28
7009 D29
7009 E28
7009 E27
7010 J 5
7010 Q29
7010 D27
7010 D31
7010 Q29
C16 I 6
C17 I 7
X1 H 6

PRS 03279

CS 19 004

13-3

CIRCUIT DIAGRAM FRONT AND KEYBOARD



1005	K13
2001	H10
2002	G10
2003	G10
2004	K12
3001	G10
3002	G11
3003	G11
3004	H13
3005	H13
3006	I 13
3007	I 12
3008	J 5
3009	J 6
3010	K13
3011	L13
3012	K14
3013	L14
3014	K 6
3015	L 5
3017	F 6
3018	G 6
3019	G 5
3020	G 6
3021	H 5
3022	H 5
3023	E 6
3901	C13
3902	G12
6001	B 5
6002	H10
6007	H11
6503	K 6
6511	I 12
6512	K14
6513	L 5
6514	G 6
6515	G 5
6516	H 5
6517	E 5
6604	F 2
6605	F 2
6606	F 1
7501	C15

PRS.03162
T-10 745
CDV475

PARTSLIST

µp panel

	5322 122 32143	22PF 100V
	4822 122 31069	39PF 2% 100V
3005	4822 100 10874	TRIMMING POTMETER 1K LIN 20%
5001	4822 157 51316	LAL04T121K
	4822 242 71845	X-TAL 12 MHZ
	4822 130 30621	1N4148
7001	4822 209 72411	MAB8032AH-12P
7002	5322 209 81648	SN74LS373N (MTLA)
7003	4822 209 73715	UPD27128D CDV475
7003	4822 209 73714	UPD27128D CDV475/95
7003	4822 209 73717	UPD27128D CV55
7003	4822 209 73716	UPD27128D CDV988
7004	4822 209 72028	8155
7005	4822 209 72409	MN1297Z
7006	4822 209 71277	PD0011
7007	5322 209 81521	N74LS157N
7008	5322 209 81521	N74LS157N
7009	5322 209 85311	SN74LS32N (MTLA)
7010	5322 209 81625	N74LS04N
7011	4822 130 44197	TRANS BC558B

FRONT PANEL

	4822 130 30621	1N4148
	4822 130 33732	BZV85-C15
	5322 130 34957	TLR123
	5322 130 41982	BC848B
	5322 130 41983	BC858B
7501	4822 209 73149	IC TMS3763CNL
217	4822 130 90495	DISPLAY 6-BT-1072K

KEY BOARD PANEL 3104 108 59280

Various

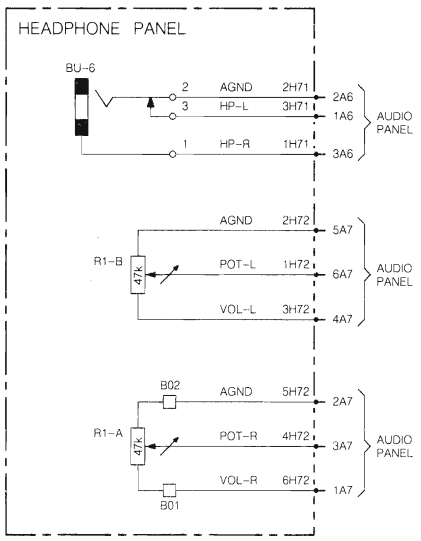
S1	4822 276 11276	SWITCH PLAY
S2	4822 276 11276	SWITCH PAUSE
S3	4822 276 11276	SWITCH STOP
6604	5322 130 34957	TLR123
6605	5322 130 34957	TLR123
6606	5322 130 34957	TLR123

HEADPHONE PANEL 3104 10859280

Various

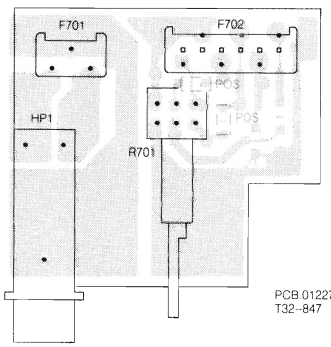
3701	4822 102 10388	POTENTIOMETER
B-6	4822 267 40661	HEADPHONE CONNECTOR

HEADPHONE PANEL



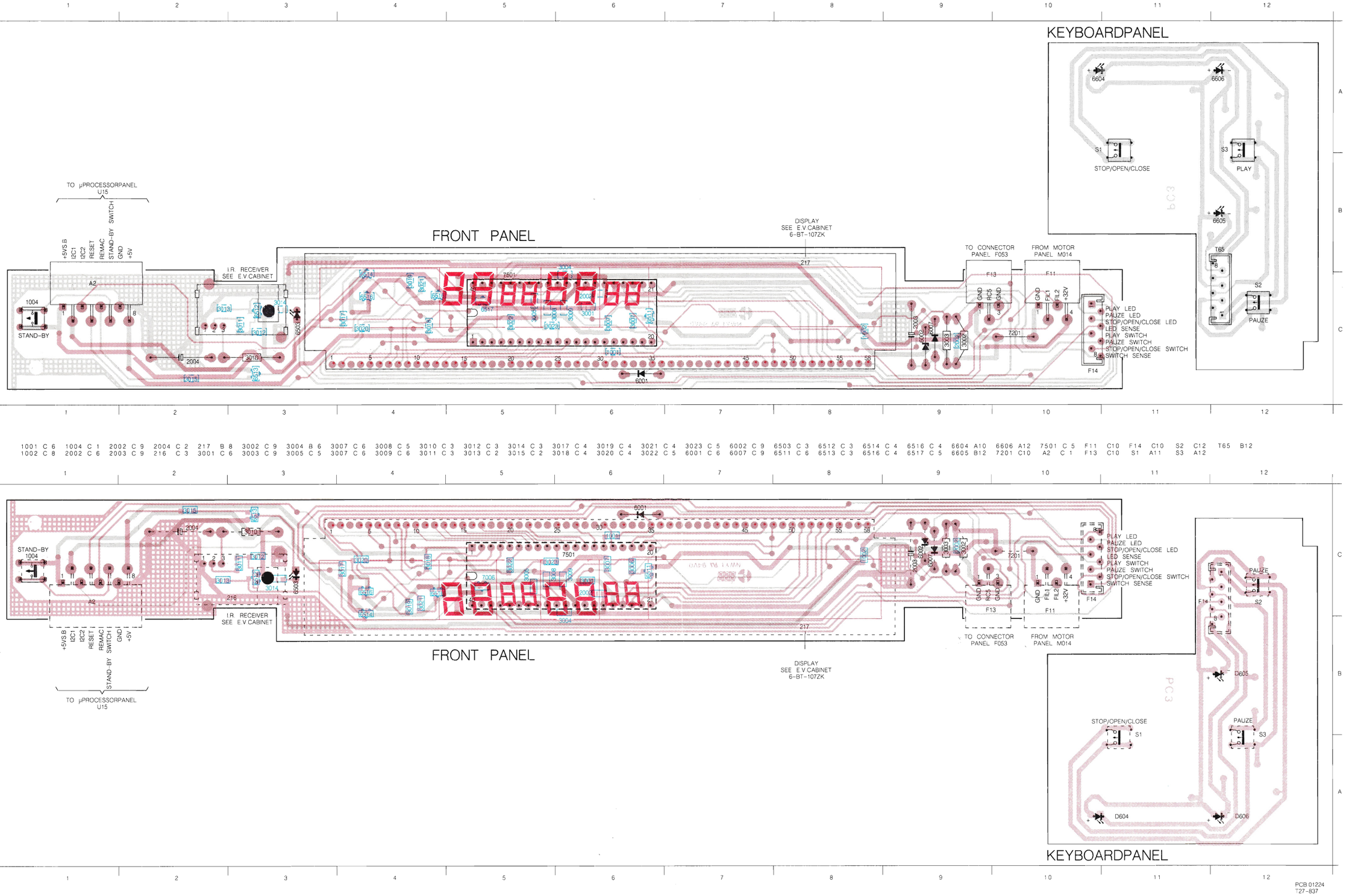
PRS.03429
T32-816

HEADPHONE

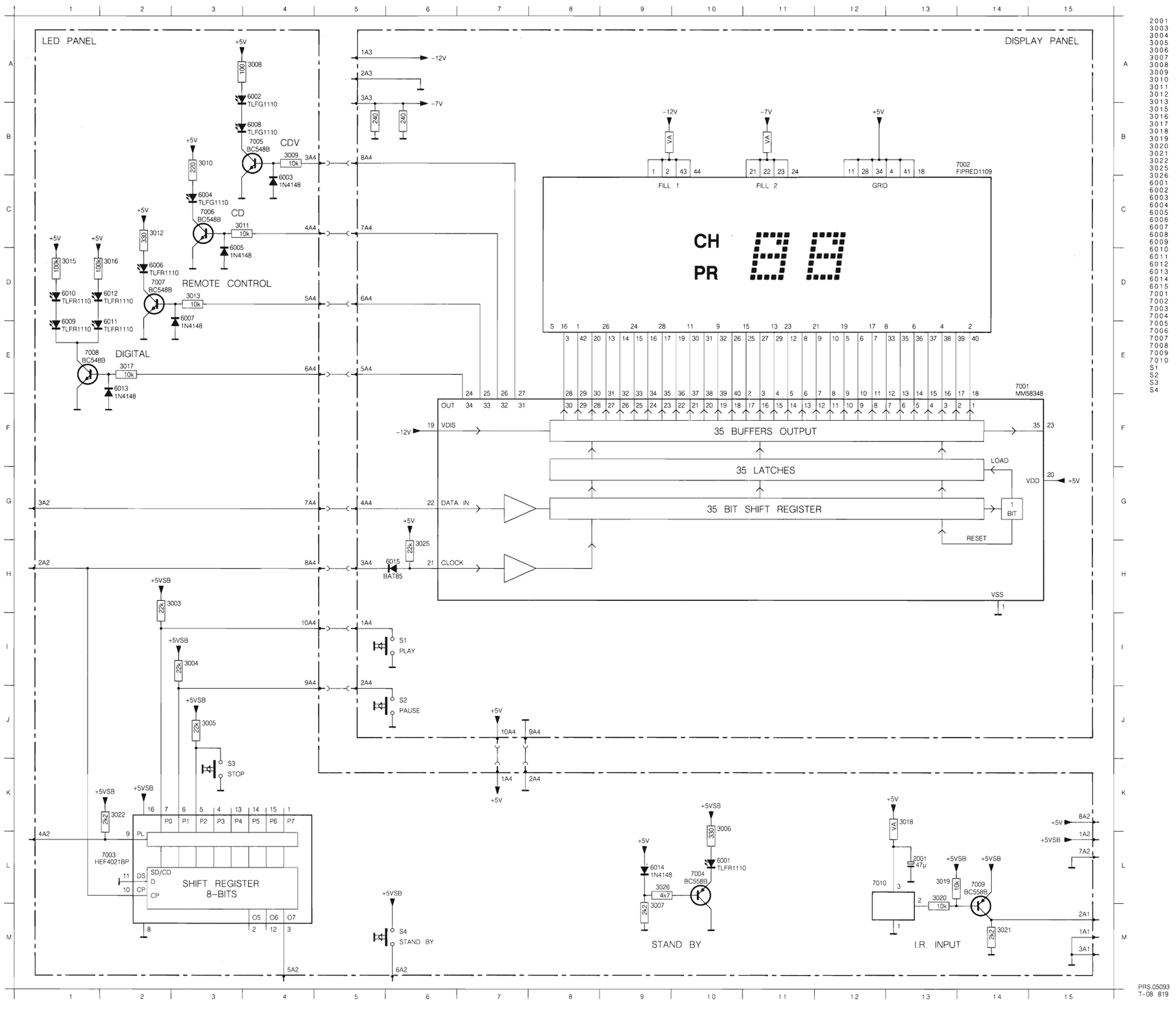


PCB.01227
T32-847

PRINT LAY-OUT FRONT AND KEYBOARD



CIRCUIT DIAGRAM FRONT AND KEYBOARD CDV988

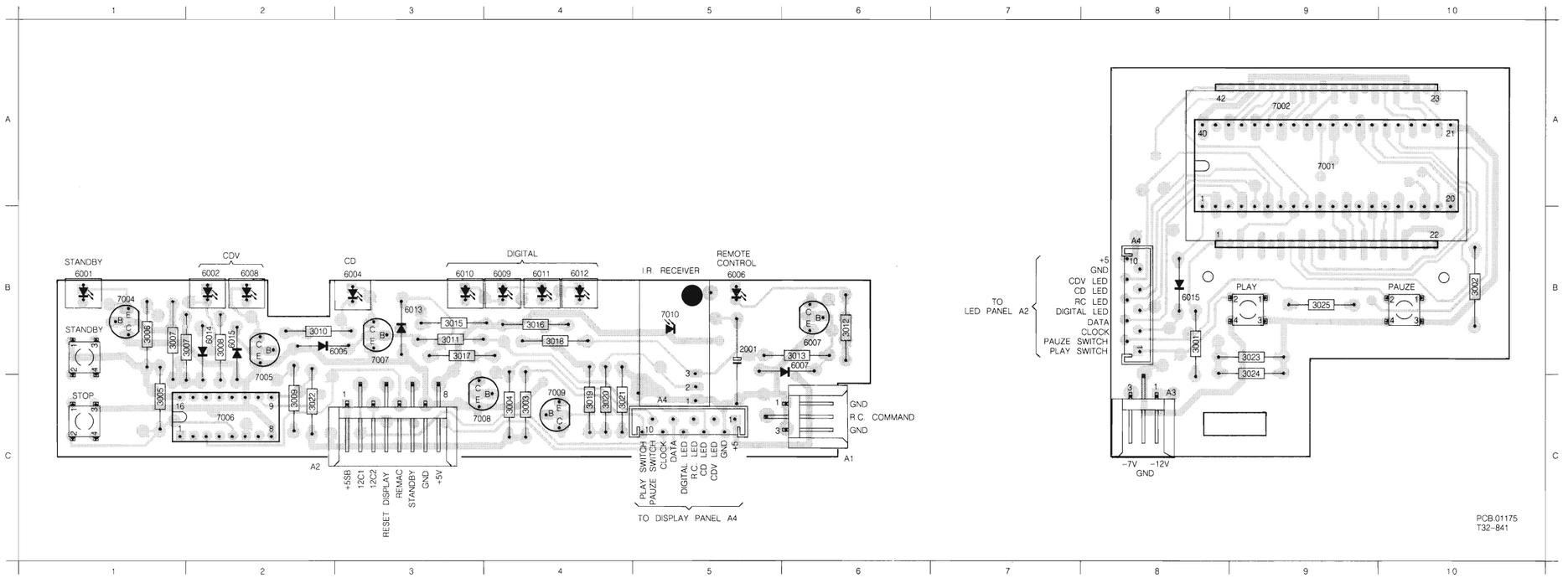


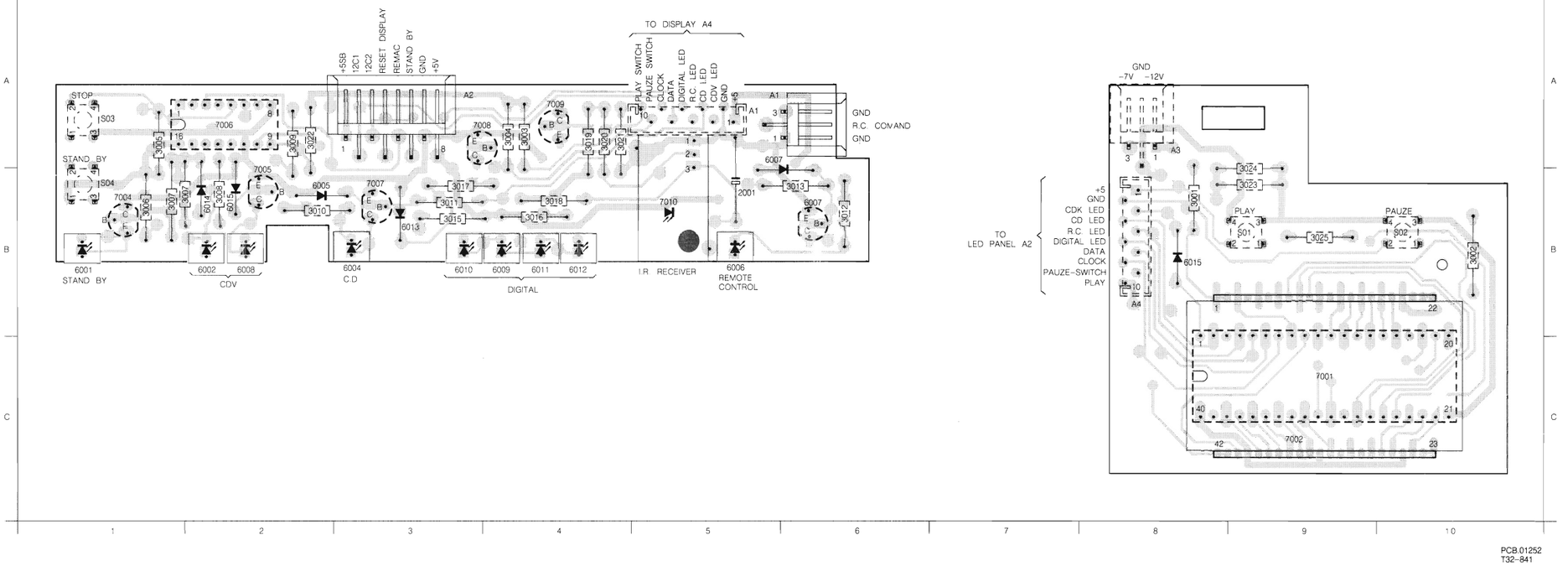
2001	L	13
3003	H	3
3004	I	3
3005	J	3
3006	K	10
3007	M	9
3008	A	4
3009	B	4
3010	B	3
3011	C	4
3012	C	2
3013	D	3
3015	D	1
3016	D	2
3017	E	2
3018	K	13
3019	L	13
3020	L	13
3021	M	14
3022	K	2
3025	H	6
3026	L	9
6001	L	10
6002	A	4
6003	C	4
6004	C	3
6005	C	3
6006	D	2
6007	D	3
6008	B	4
6009	E	1
6010	D	1
6011	E	2
6012	D	2
6013	E	2
6014	L	9
6015	H	6
7001	E	14
7002	B	14
7003	L	2
7004	L	10
7005	B	4
7006	C	3
7007	D	2
7008	E	1
7009	L	14
7010	L	12
S1	I	6
S2	J	6
S3	K	3
S4	M	6

PRS.05093
T-08 819

PRINT LAY-OUT FRONT AND KEYBOARD CDV988

2001 B 5 3003 C 4 3006 B 1 3008 B 2 3011 B 3 3015 B 3 3018 B 4 3021 C 4 3024 C 9 6002 B 2 6006 B 5 6008 B 2 6011 B 4 6014 B 2 7001 A 9 7005 C 2 7008 C 3 A1 C 6 A4 C 5
3001 B 8 3004 C 4 3007 B 2 3009 C 2 3012 B 6 3016 B 4 3019 C 4 3022 C 2 3025 B 9 6004 B 3 6007 B 6 6009 B 4 6012 B 4 6015 B 2 7002 A 9 7006 C 2 7009 C 4 A2 C 2 A4 B 8
3002 B10 3005 C 1 3007 B 1 3010 B 2 3013 B 6 3017 B 3 3020 C 4 3023 B 9 6001 B 1 6005 B 3 6007 B 6 6010 B 3 6013 B 3 6015 B 8 7004 B 1 7007 B 3 7010 B 5 A3 C 8





PARTSLIST

LED PANEL

6001	4822 130 33528	LED FLTR 1110 RED
6002	4822 130 33528	LED FLTR 1110 RED
6009	4822 130 33528	LED FLTR 1110 RED
6010	4822 130 33528	LED TFLR 1110 RED
6011	4822 130 33528	LED TFLR 1110 RED
6012	4822 130 33528	LED TFLR 1110 RED
6004	4822 130 32545	LED TFLG 1110 GREEN
6008	4822 130 32545	LED TFLG 1110 GREEN
6006	4822 130 80849	LED TFLR 4499 RED
	4822 130 30621	DIODE IN4148
	4822 130 31983	DIODE BAT 85

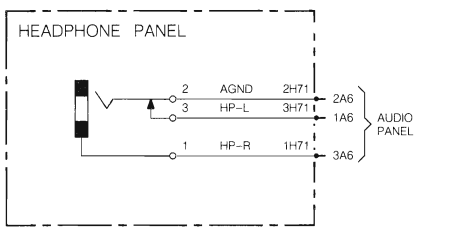
	4822 209 72122	IC MM58348
	4822 209 72423	IC MC14021BCP

	4822 130 44197	TRANS BC558B
	4822 130 40937	TRANSISTOR BC548B

Various

	4822 130 90554	FL. DISPLAY
	4822 218 10213	IR.RECEIVER 0816/30
S1	4822 276 11896	SWITCH PUSH
S2	4822 276 11896	SWITCH PUSH
S3	4822 276 11896	SWITCH PUSH
S4	4822 276 11896	SWITCH PUSH

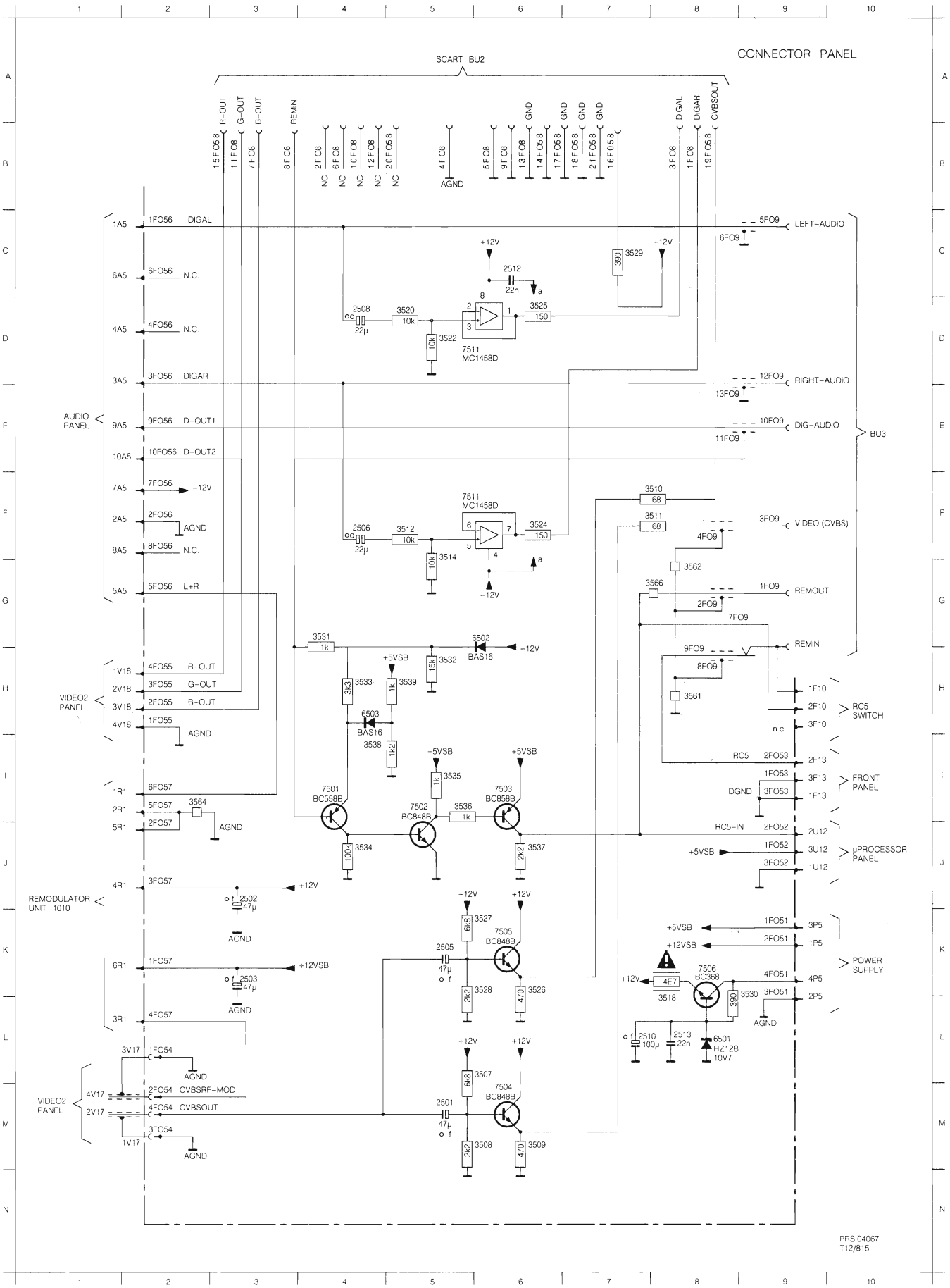
HEADPHONE PANEL



PRS.04066
T12-816

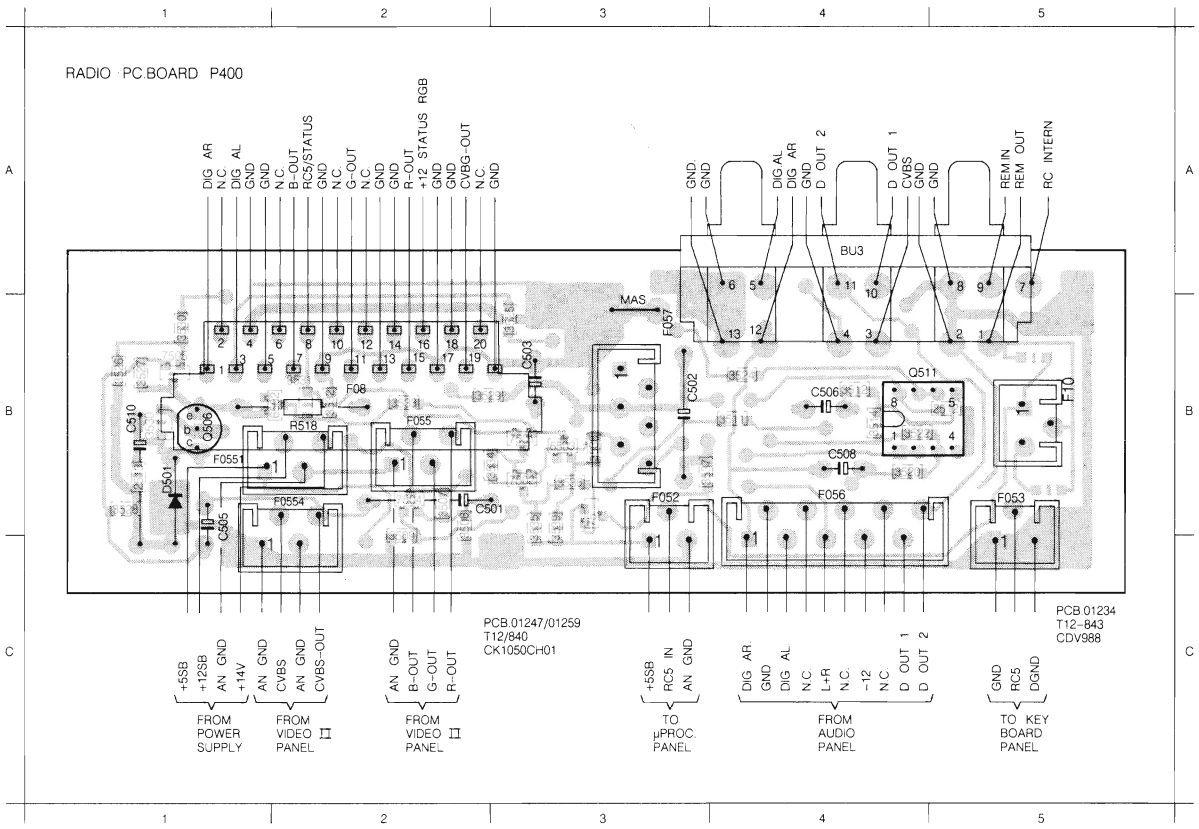
CIRCUIT DIAGRAM CONNECTOR PANEL CDV988

2501	M 5	2508	D 4	3508	M 6	3514	F 5	3525	D 6	3530	K 9	3535	I 5	3561	H 8	6502	G 6	7504	M 6
2502	J 3	2510	L 8	3509	M 6	3518	L 8	3526	K 6	3531	G 4	3536	I 5	3562	G 8	6503	H 4	7505	K 6
2503	K 3	2512	C 6	3510	F 8	3520	D 5	3527	K 6	3532	H 5	3537	J 6	3564	I 2	7501	I 4	7506	K 8
2505	K 5	2513	L 8	3511	F 8	3522	D 5	3528	K 6	3533	H 4	3538	I 4	3566	G 8	7502	I 5	7511	F 6
2506	F 4	3507	L 6	3512	F 5	3524	F 6	3529	C 7	3534	J 4	3539	H 5	6501	L 8	7503	I 6	7511	D 6



PRINT LAY-OUT

2512	B 5	3512	B 4	3526	B 1	3531	B 2	3537	B 3	7501	B 3	C502	B 3	D501	B 1	F056	B 4	Q511	B 4
2513	B 1	3514	B 4	3527	B 1	3532	B 2	3538	B 3	7502	B 3	C503	B 3	F052	B 3	F057	B 3	R518	B 2
3507	B 2	3520	B 4	3528	B 1	3533	B 2	3539	B 3	7504	B 2	C505	B 1	F053	B 5	F08	B 2		
3508	B 2	3522	B 4	3529	B 3	3534	B 3	6502	B 2	7505	B 1	C506	B 4	F055	B 2	F10	B 5		
3509	B 2	3524	B 4	3530	B 1	3535	B 3	6503	B 3	BU3	A 4	C508	B 4	F0551	B 1	MAS	B 3		
3511	B 4	3525	B 3	3530	B 1	3536	B 3	75	B 3	C501	B 3	C510	B 1	F0554	B 2	Q506	B 1		



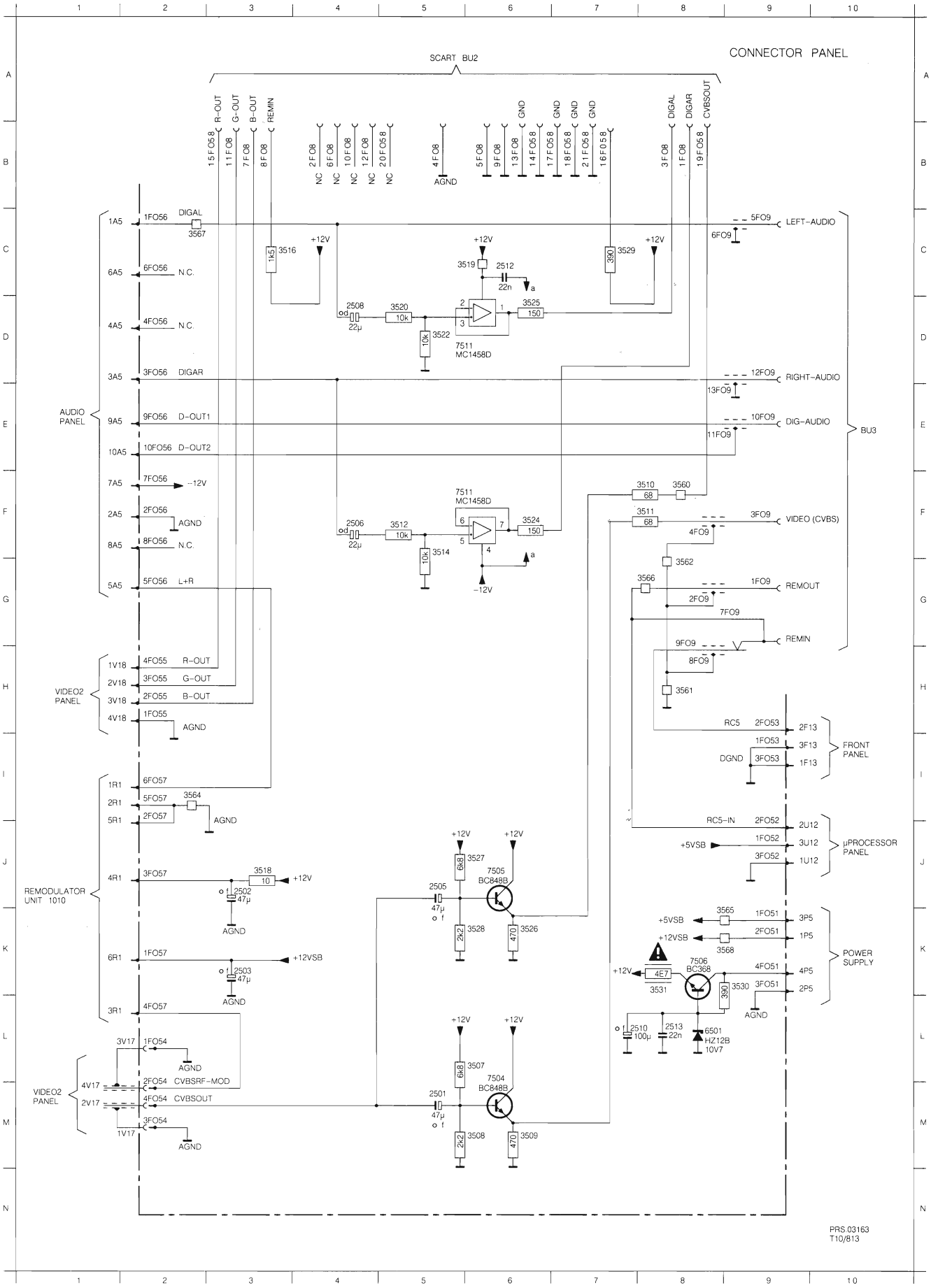
PARTSLIST

CONNECTOR PANEL 3104 108 61220

		
	4822 124 41557	ELCAP BIP.220µF 10V
		
	4822 111 30499	NFR 4E7 5%
		
	5322 130 32026	HZ12B2
	5322 130 31928	BAS16
		
	5322 130 41983	BC858B
	5322 130 41982	BC848B
	5322 130 44647	BC368
		
7511	4822 209 81349	IC OPAMP MC1458P1
Various		
BU-2	4822 267 60172	SCART CONNECTOR
BU-3	4822 267 50801	CINCH CONNECTOR
BU-6	4822 267 40661	HEADPHONE CONNECTOR

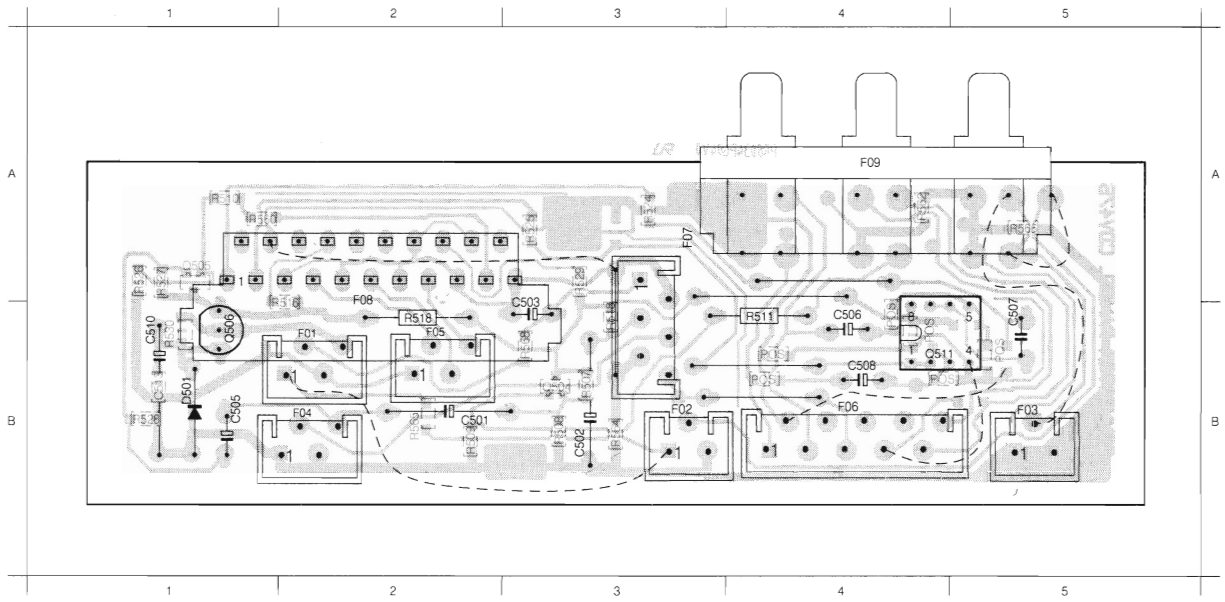
CIRCUIT DIAGRAM CONNECTOR PANEL

2501	M 5	2506	F 4	2513	L 8	3510	F 8	3516	C 3	3522	D 5	3527	J 6	3531	K 8	3564	I 2	3568	K 9	7506	K 8		
2502	J 3	2508	D 4	3507	L 6	3511	F 8	3518	J 3	3524	F 6	3528	K 6	3560	F 8	3565	K 9	6501	L 8	7511	F 6		
2503	K 3	2510	L 8	3508	M 6	3512	F 5	3519	O 6	3525	D 6	3529	C 7	3561	H 8	3566	G 8	7504	L 6	7511	D 6		
2505	J 5	2512	C 6	3509	M 6	3514	F 5	3520	D 5	3526	K 6	3530	K 9	3562	G 8	3567	C 2	7505	J 6				

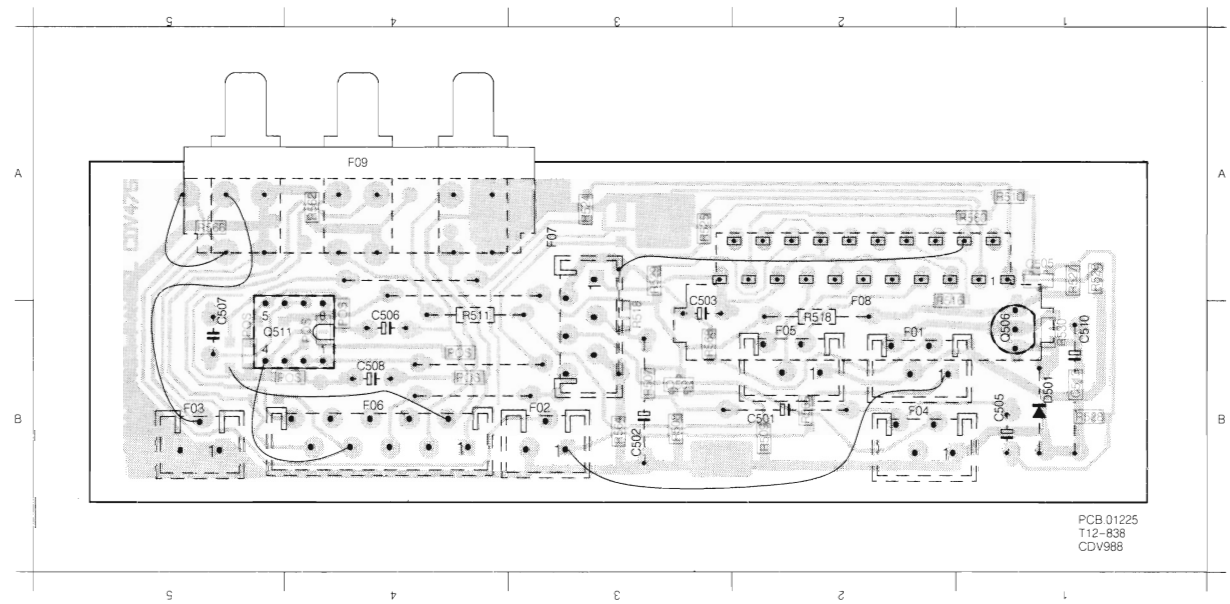


PRINT LAY-OUT

C501	B 2	C507	B 5	F01	B 2	F06	B 4	POS	B 4	Q504	B 3	R508	B 3	R518	B 2	R527	A 1	R562	A 4
C502	B 3	C508	B 4	F02	B 3	F07	A 3	POS	B 5	Q505	A 1	R509	B 2	R518	B 3	R528	B 1	R564	B 3
C503	B 3	C510	B 1	F03	B 5	F08	A 2	POS	B 4	Q506	B 1	R510	A 1	R524	A 3	R529	A 3	R565	B 2
C505	B 1	C513	B 1	F04	B 2	F09	A 4	POS	B 4	Q511	B 4	R511	B 4	R525	A 3	R530	B 1	R566	A 5
C506	B 4	D501	B 1	F05	B 2	POS	B 4	POS	B 4	R507	B 3	R516	B 2	R526	A 1	R560	A 1	R568	B 3



C501	B 2	C507	B 5	F01	B 2	F06	B 4	POS	B 4	Q504	B 3	R508	B 3	R518	B 2	R527	A 1	R562	A 4
C502	B 3	C508	B 4	F02	B 3	F07	A 3	POS	B 5	Q505	A 1	R509	B 2	R518	B 3	R528	B 1	R564	B 3
C503	B 3	C510	B 1	F03	B 5	F08	A 2	POS	B 4	Q506	B 1	R510	A 1	R524	A 3	R529	A 3	R565	B 2
C505	B 1	C513	B 1	F04	B 2	F09	A 4	POS	B 4	Q511	B 4	R511	B 4	R525	A 3	R530	B 1	R566	A 5
C506	B 4	D501	B 1	F05	B 2	POS	B 4	POS	B 4	R507	B 3	R516	B 2	R526	A 1	R560	A 1	R568	B 3

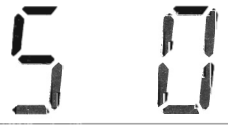


PARTS LIST

CONNECTOR PANEL 3104 108 59280

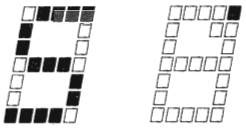
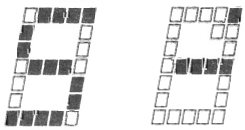
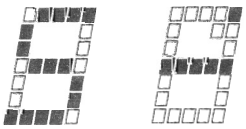
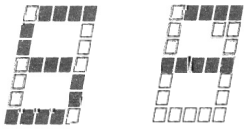
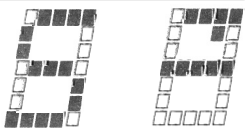
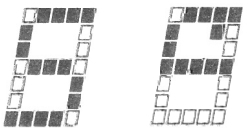
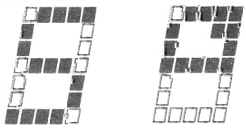
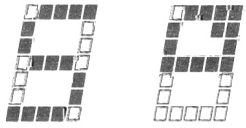
	5322 130 41982	BC848B
	4822 209 81349	MC 1458D
Various		
B–2	4822 267 60172	SCART CONNECTOR
B–3	4822 267 50801	CINCH CONNECTOR

SERVICE ROUTINES

STEP	ON DISPLAY	REMARKS
1	STAND-BY LED ON	PUSH THE BUTTONS STOP/OPEN/CLOSE AND PAUSE TOGETHER AND KEEP THEM PRESSED UNTIL STEP 3
2	STAND-BY LED OUT 5 FROM "SERVICE" APPEARS	PUSH THE BUTTON POWER ON/STAND-BY
3		LOAD A DISC
4		PUSH THE PLAY BUTTON
5		LEAD IN AREA REACHED
6		FOCUS POINT FOUND
7		RADIAL TRACKING ACTIVE
8		TURNTABLE MOTOR IN PHASE LOCK
9		O.P.U. STEP CONTROL ACTIVE
10		O.P.U. CONTROL ACTIVE
11		SUBCODE READING ACTIVE (CD,CDV-SINGLE) MANCHESTER CODE READING ACTIVE (L.V.-DISC)

MDA.01574
T07-838

SERVICE ROUTINES **CDV988**

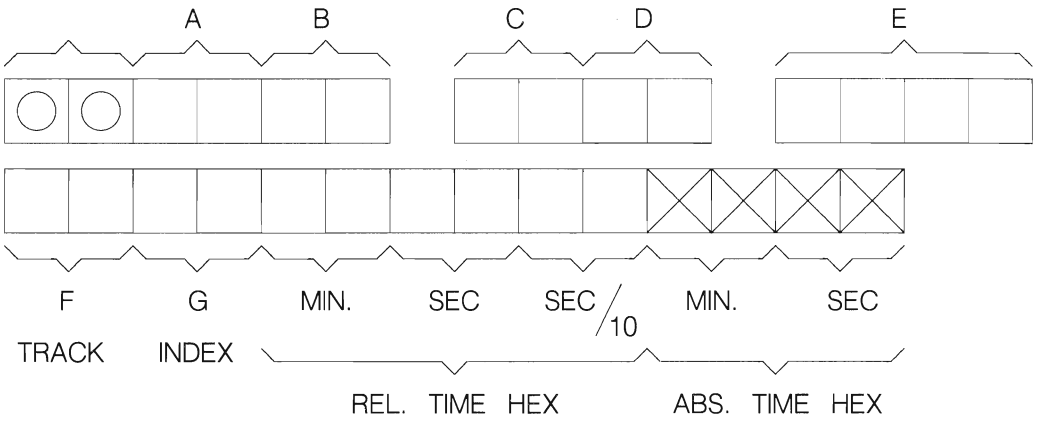
STEP	ON DISPLAY	REMARKS
1	STANDBY LED ON	PUSH THE BUTTONS STOP AND PAUSE TOGETHER AND KEEP THEM PRESSED UNTIL STEP 3
2	STANDBY LED OUT 	PUSH THE BUTTON STAND-BY 2X
3		LOAD A DISC
4		PUSH THE PLAY BUTTON
5		LEAD IN AREA REACHED
6		FOCUS POINT FOUND
7		RADIAL TRACKING ACTIVE
8		TURNTABLE MOTOR IN PHASE LOCK (L.V.)
9		O.P.U. STEP CONTROL ACTIVE
10		O.P.U. CONTROL ACTIVE
11		SUBCODE READING ACTIVE (CD,CDV-SINGLE) MANCHESTER CODE READING ACTIVE (L.V.-DISC)

SERVICE ROUTINES

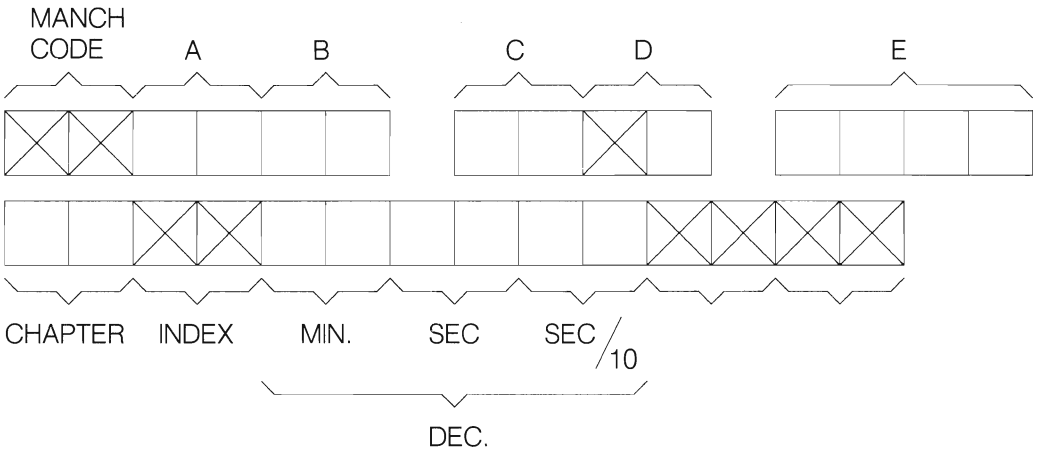
ON T.V. SCREEN

PLAY — FOR A,B,C,D AND E SEE MDA.01575

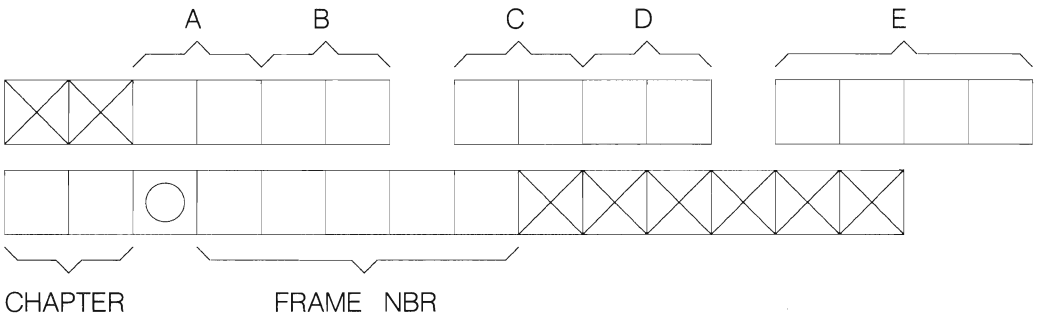
CD& CDV SINGLE



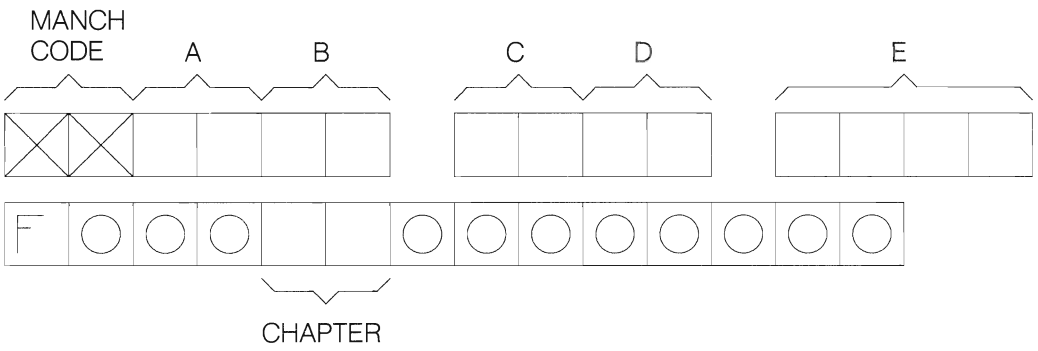
CDV 8" AND 12"



L.V. CAV



L.V. CLV



⊠ =UNREADABLE INFORMATION

MDA.01573
T07-838

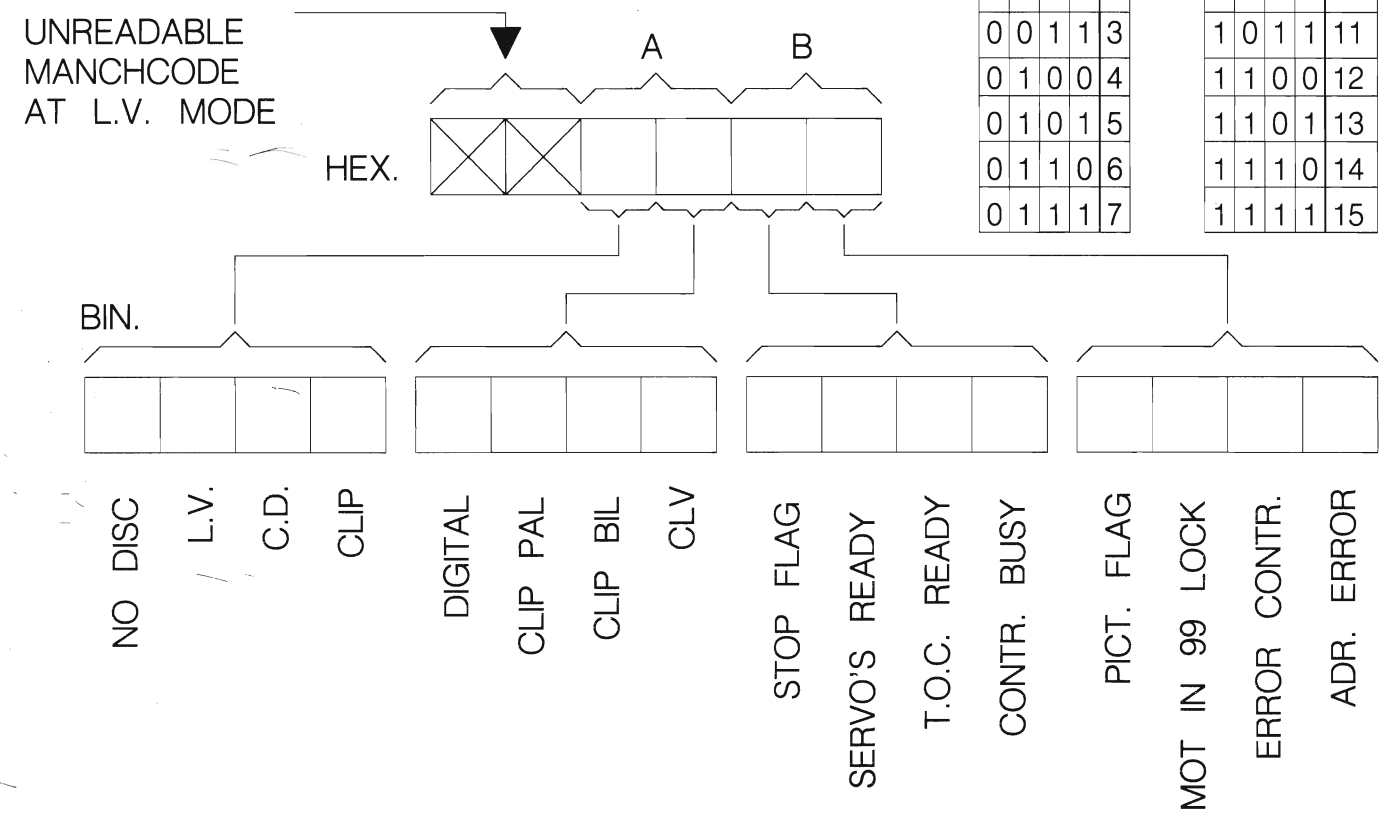
A. READ STATUS FLAG.

B. CONTROL STATUS FLAG.

HEX. CONV. TABLE

0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7

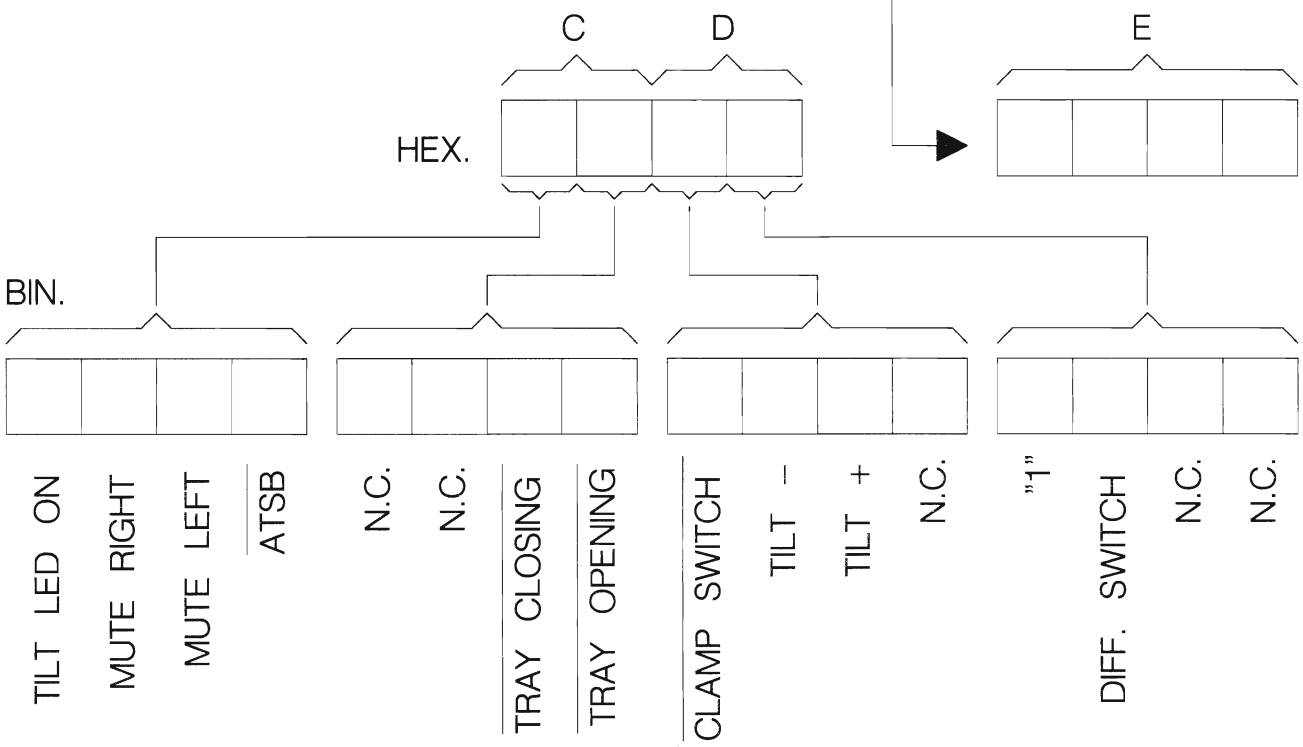
1	0	0	0	8
1	0	0	1	9
1	0	1	0	10
1	0	1	1	11
1	1	0	0	12
1	1	0	1	13
1	1	1	0	14
1	1	1	1	15



C. SERIAL OUTPUT REGISTER 7009.

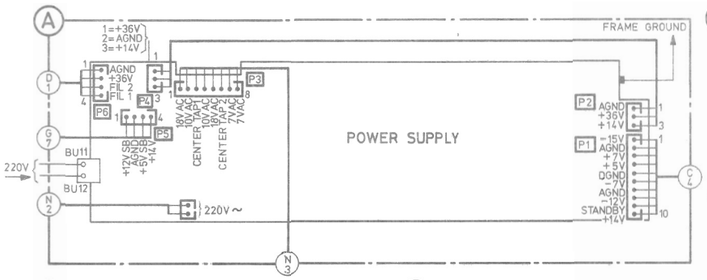
D. SERIAL INPUT REGISTER 7010.

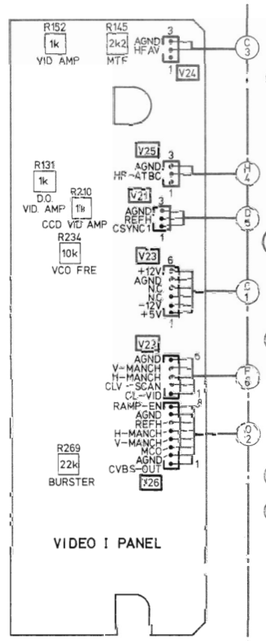
VERSION N.R. OF SOFTWARE IN µP

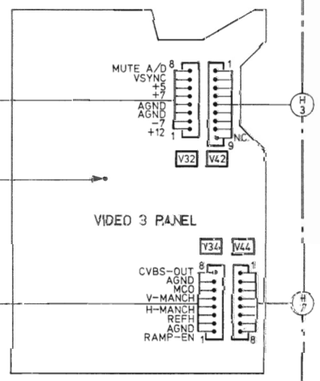


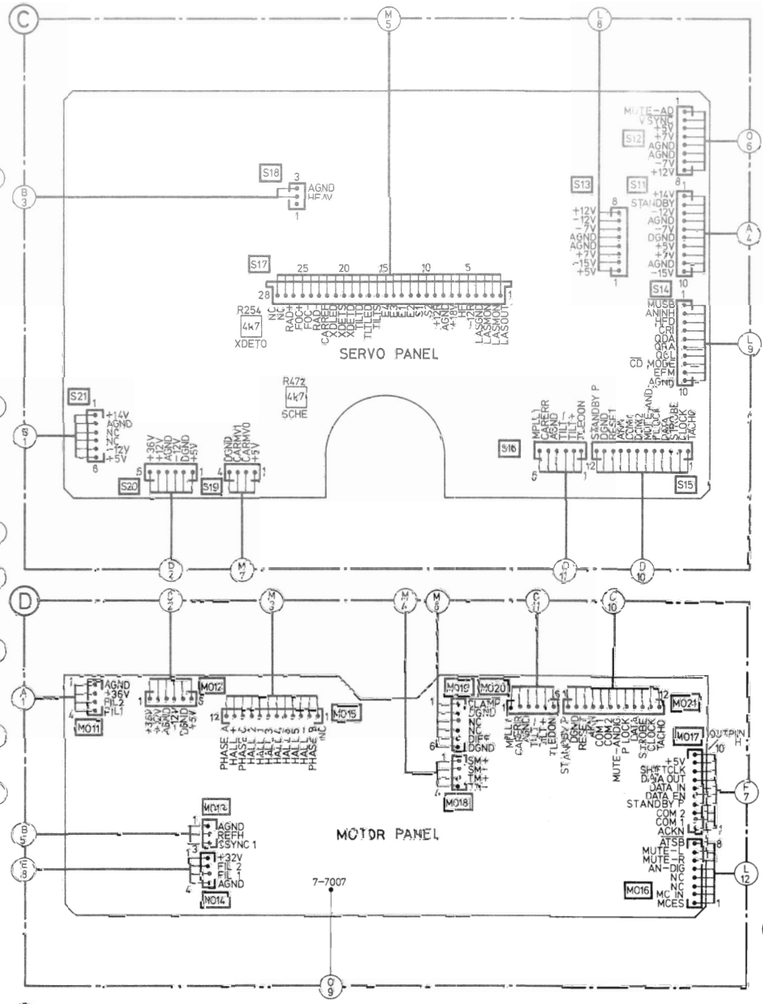
MDA.01575
T07–838

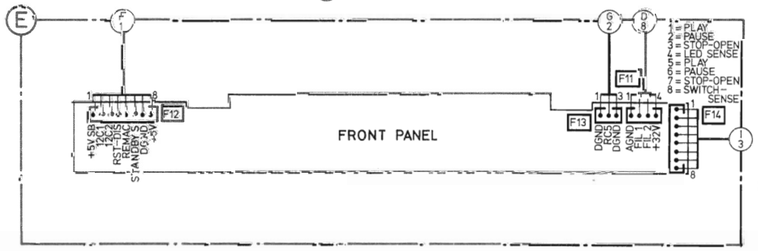
WIRING DIAGRAM

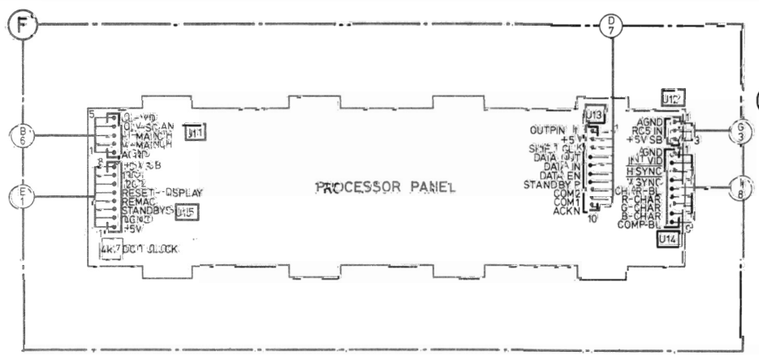


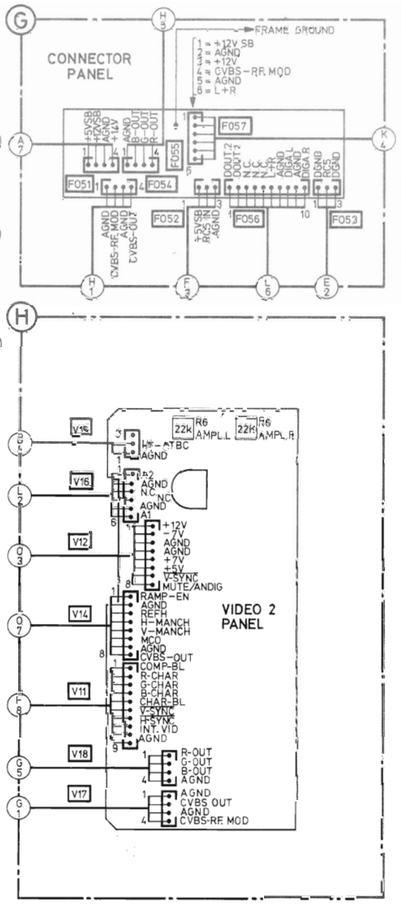


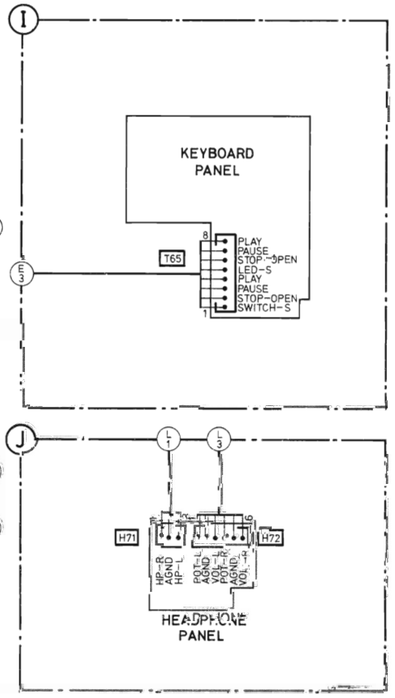


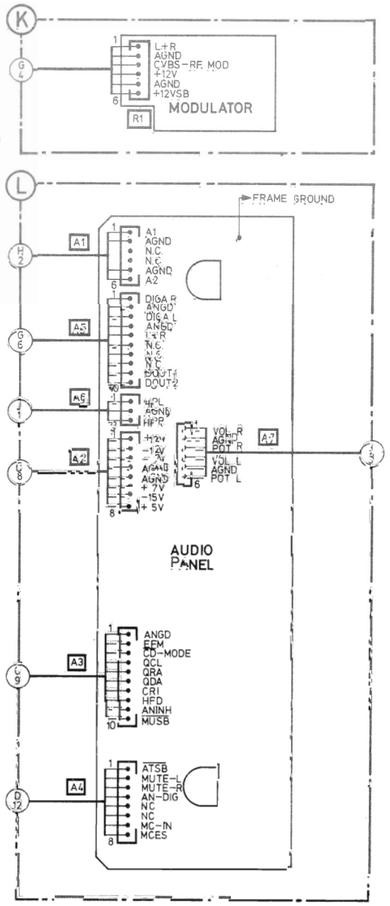


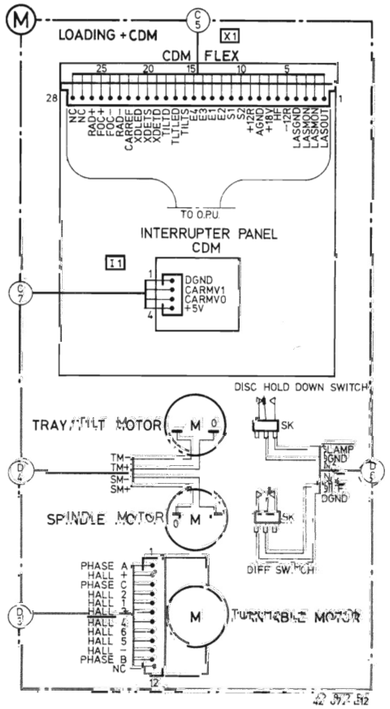


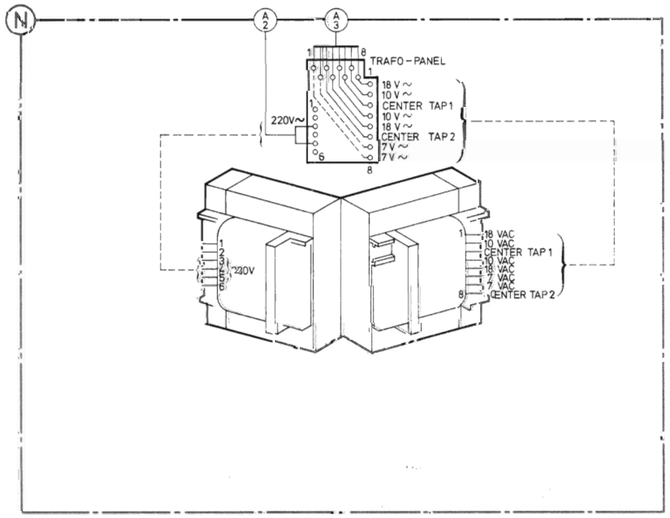




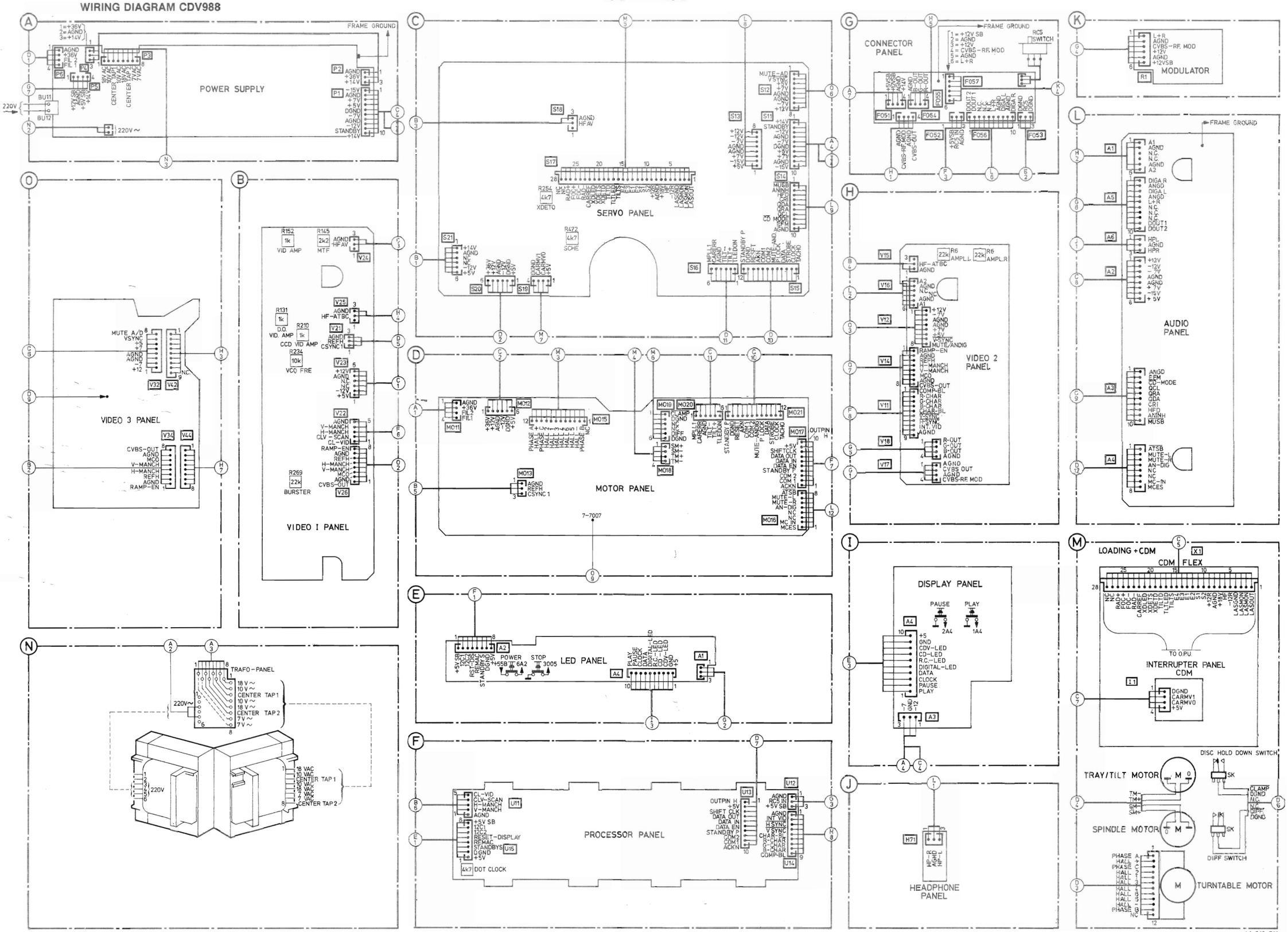




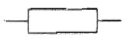
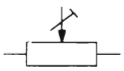
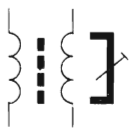


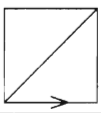
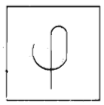
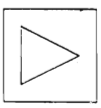


WIRING DIAGRAM CDV988

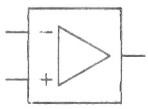
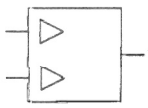
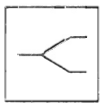
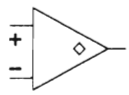
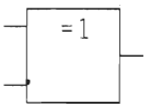
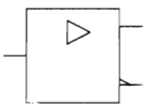
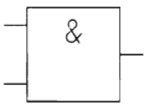
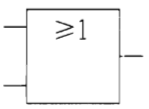
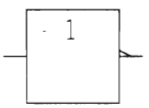


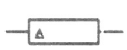
16. SYMBOLS/CHIPCOMPONENTS

SYMBOL	DESCRIPTION
	Capacitor, general
	Electrolytic capacitor (+ and - may be omitted)
	Bipolar electrolytic capacitor (+ may be omitted)
	Resistor, general
	N.T.C. resistor
	P.T.C. resistor
	Voltage divider with preset adjustment
	Chip jumper
	Pin contact
	Bus contact
	Coil, self-induction
	Transformer with electrically poor conducting core and adjustable pre-magnetization
	Diode
	Zener diode
	Stabistor
	Double variable capacity diode (in one envelope)
	Photo conductive diode
	L.E.D.

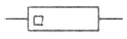
SYMBOL	DESCRIPTION
	Transistor (N.P.N.)
	Transistor (P.N.P.)
	Direct current (DC)
	Alternating current (AC)
	Earth (functional)
	Frame or chassis connection
	Direction in which AC voltages are passed on (optional present)
	Interrupted line
	Not-connected crossing lines
	Connected lines
	Cable tree with lead-outs
	Changer, general (arrow is optional)
	Voltage Controlled Oscillator
	Band-pass filter
	Phase changing network
	Delay element
	Amplifier, general

MDA.00083 T28

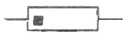
SYMBOL	DESCRIPTION
	Operational amplifier
	Differential amplifier
	Splitter
	Operational amplifier with open output
	Exclusive OR gate
	True/complement amplifier with high input
	Flip Flop
	AND gate
	OR gate
	Inverter with high input



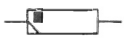
0.2W (CR 16) ≤ 220kΩ 5%
> 270kΩ 10%



0.33W (CR 25) ≤ 1 MΩ 5%
> 1 MΩ 10%

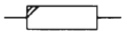


0.33W (SFR25) 5%

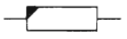


0.25W (VR 25) ≤ 10MΩ 5%
> 10MΩ 10%

0.5W (CR 37) ≤ 1 MΩ 5%
> 1 MΩ 10%



0.67W (CR 52) 5%



1.15W (CR 68) 5%

Ceramic plate

Polyester flat foil

Polyester mepolesco

Mylar
(Polyester flat foil small sized)

Micropoco

Tubular ceramic
(body colour pink or yellow/green)

Miniature single elco

Subminiature tantalum

*

a	=	2.5 V
b	=	4 V
c	=	6.3 V
d	=	10 V
e	=	16 V
f	=	25 V
g	=	40 V
h	=	63 V
i	=	100 V
j	=	125 V
l	=	125 V
m	=	150 V
n	=	160 V
q	=	200 V
r	=	250 V
s	=	300 V
t	=	350 V
u	=	400 V
v	=	500 V
w	=	630 V
x	=	1000 V
A	=	1.6 V
B	=	6 V
C	=	12 V
D	=	15 V
E	=	20 V
F	=	35 V
G	=	50 V
H	=	75 V
I	=	80 V

MDA.00084

© Chips 50 V NP0 S1206

1 pF	5%	4822 122 32479
1,2 pF	5%	4822 122 33013
1,5 pF	5%	4822 122 31792
1,8 pF	5%	4822 122 32087
2,2 pF	5%	4822 122 32425
3,3 pF	5%	4822 122 32079
3,9 pF	5%	4822 122 32081
4,7 pF	5%	4822 122 32082
5,6 pF	5%	4822 122 32506
6,8 pF	5%	4822 122 32507
8,2 pF	5%	4822 122 32083
10 pF	5%	4822 122 31971
12 pF	5%	4822 122 32139
15 pF	5%	4822 122 32504
18 pF	5%	4822 122 31769
22 pF	10%	4822 122 31837
27 pF	5%	4822 122 31966
33 pF	5%	4822 122 31756
39 pF	5%	4822 122 31972
47 pF	5%	4822 122 31772
56 pF	5%	4822 122 31774
68 pF	5%	4822 122 31961
82 pF	10%	4822 122 31839
100 pF	5%	4822 122 31765
120 pF	5%	4822 122 31766
150 pF	5%	4822 122 31767
180 pF	2%	4822 122 31794
220 pF	5%	4822 122 31965
270 pF	5%	4822 122 32142
330 pF	10%	4822 122 31642
390 pF	5%	4822 122 31771
470 pF	5%	4822 122 31727
560 pF	5%	4822 122 31773
680 pF	5%	4822 122 31775
820 pF	5%	4822 122 31974
1 nF	10%	5322 122 31647
1,2 nF	5%	4822 122 31807
1,5 nF	10%	4822 122 31781
1,8 nF	10%	4822 122 32153
2,2 nF	10%	4822 122 31644
2,7 nF	10%	4822 122 31783
3,3 nF	10%	4822 122 31969
3,9 nF	10%	4822 122 32566
4,7 nF	10%	4822 122 31784
5,6 nF	10%	4822 122 31916
6,8 nF	10%	4822 122 31976
10 nF	10%	4822 122 31728
12 nF	10%	5322 122 31648
15 nF	10%	4822 122 31782
18 nF	10%	4822 122 31759
22 nF	10%	4822 122 31797
27 nF	10%	4822 122 32541
33 nF	10%	4822 122 31981
47 nF	10%	4822 122 32542
56 nF	10%	4822 122 32183
100 nF	10%	4822 122 31947
180 nF	10%	4822 122 32915
220 nF	20%	4822 122 32715

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0 E	jumper	4822 111 90163
1 E	5%	4822 111 90184
1,1 E	5%	4822 111 90377
1,2 E	5%	4822 111 90378
1,3 E	5%	4822 111 90379
1,5 E	5%	4822 111 90381
1,6 E	5%	4822 111 90382
1,8 E	5%	4822 111 90383
2 E	5%	4822 111 90384
2,2 E	5%	5322 111 90104
2,4 E	5%	4822 111 90385
2,7 E	5%	4822 111 90386
3 E	5%	4822 111 90387
3,3 E	5%	4822 111 90388
3,6 E	5%	4822 111 90389
3,9 E	5%	4822 111 90391
4,3 E	5%	4822 111 90392

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4,7 E	5%	5322 111 90376
5,1 E	5%	4822 111 90393
5,6 E	5%	4822 111 90394
6,2 E	5%	4822 111 90395
6,8 E	5%	4822 111 90254
7,5 E	5%	4822 111 90396
8,2 E	5%	4822 111 90397
9,1 E	5%	4822 111 90398
10 E	2%	5322 111 90095
11 E	2%	4822 111 90338
12 E	2%	4822 111 90341
13 E	2%	4822 111 90343
15 E	2%	4822 111 90344
16 E	2%	4822 111 90347
18 E	2%	5322 111 90139
20 E	2%	4822 111 90352
22 E	2%	4822 111 90186
24 E	2%	4822 111 90355
27 E	2%	5322 111 90105
30 E	2%	4822 111 90356
33 E	2%	4822 111 90357
36 E	2%	4822 111 90359
39 E	2%	4822 111 90361
43 E	2%	5322 116 90125
47 E	2%	4822 111 90217
51 E	2%	4822 111 90365
56 E	2%	4822 111 90239
62 E	2%	4822 111 90367
68 E	2%	4822 111 90203
75 E	2%	4822 111 90371
82 E	2%	4822 111 90124
91 E	2%	4822 111 90375
100 E	2%	5322 111 90091
110 E	2%	4822 111 90335
120 E	2%	4822 111 90339
130 E	2%	4822 111 90164
150 E	2%	5322 111 90098
160 E	2%	4822 111 90345
180 E	2%	5322 111 90242
200 E	2%	4822 111 90348
220 E	2%	4822 111 90178
240 E	2%	4822 111 90353
270 E	2%	4822 111 90154
300 E	2%	4822 111 90156
330 E	2%	5322 111 90106
360 E	1%	4822 111 90288
360 E	2%	4822 111 90358
390 E	2%	5322 111 90138
430 E	2%	4822 111 90362
470 E	2%	5322 111 90109
510 E	2%	4822 111 90245
560 E	2%	5322 111 90113
620 E	2%	4822 111 90366
680 E	2%	4822 111 90162
750 E	2%	5322 111 90306
820 E	2%	4822 111 90171
910 E	2%	4822 111 90372
1 k	2%	5322 111 90092
1,1 k	2%	4822 111 90336
1,2 k	2%	5322 111 90096
1,3 k	2%	4822 111 90244
1,5 k	2%	4822 111 90151
1,6 k	2%	5322 111 90265
1,8 k	2%	5322 111 90101
2 k	2%	4822 111 90165
2,2 k	2%	4822 111 90248
2,4 k	2%	4822 111 90289
2,7 k	2%	4822 111 90569
3 k	2%	4822 111 90198
3,3 k	2%	4822 111 90157
3,6 k	2%	5322 111 90107
3,9 k	2%	4822 111 90571
4,3 k	2%	4822 111 90167
4,7 k	2%	5322 111 90111
5,1 k	2%	5322 111 90268
5,6 k	2%	4822 111 90572
6,2 k	2%	4822 111 90545

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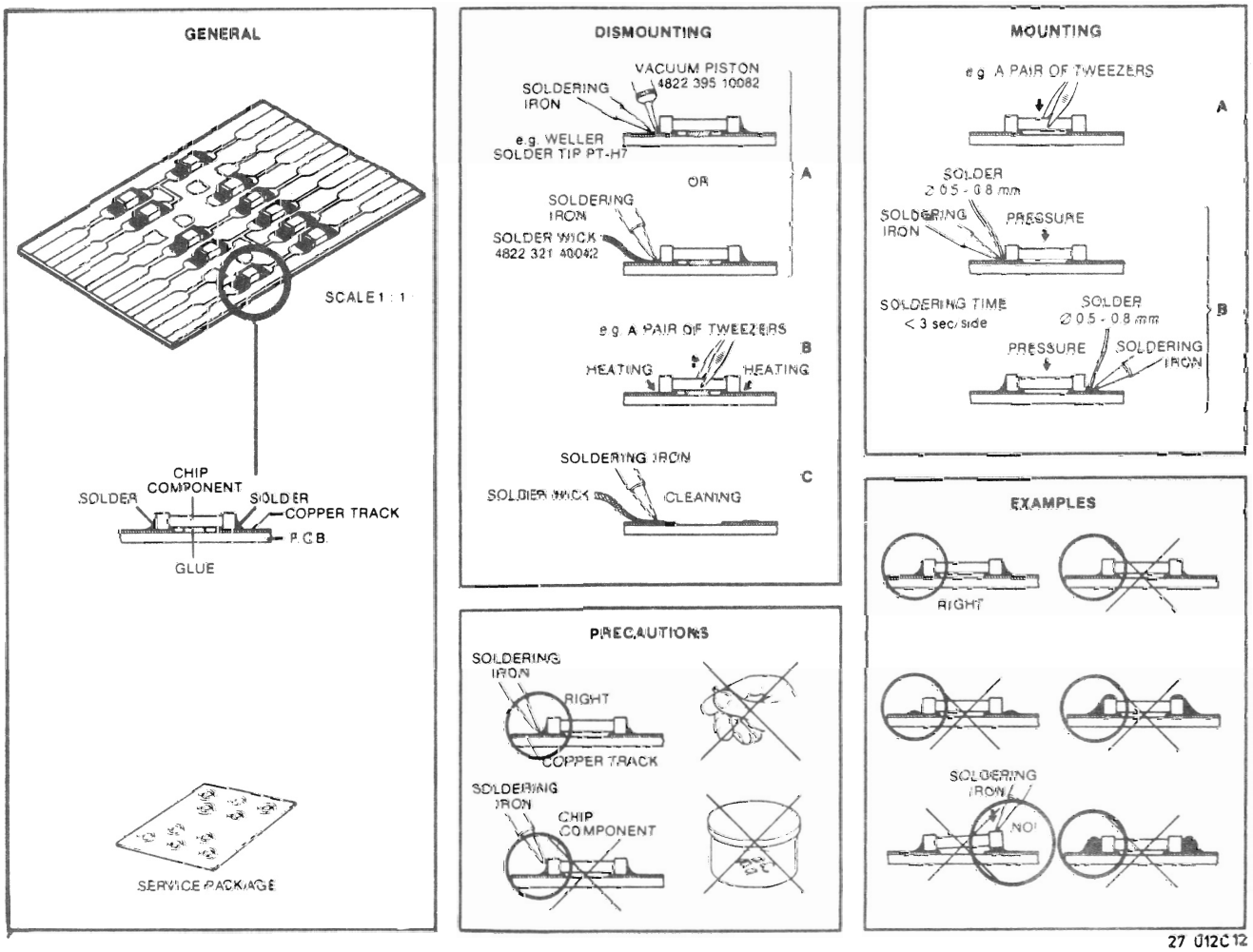
1U

6,8 k	2%	4822 111 90544
7,5 k	2%	4822 111 90276
8,2 k	2%	5322 111 90118
9,1 k	2%	4822 111 90373
10 k	2%	4822 111 90249
11 k	2%	4822 111 90337
12 k	2%	4822 111 90253
13 k	2%	4822 111 90509
15 k	2%	4822 111 90196
16 k	2%	4822 111 90346
18 k	2%	4822 111 90238
20 k	2%	4822 111 90349
22 k	2%	4822 111 90251
24 k	2%	4822 111 90512
27 k	2%	4822 111 90542
30 k	2%	4822 111 90216
33 k	2%	5322 111 90267
36 k	2%	4822 111 90514
39 k	2%	5322 111 90108
43 k	2%	4822 111 90363
47 k	2%	4822 111 90543
51 k	2%	5322 111 90274
56 k	2%	4822 111 90573
62 k	2%	5322 111 90275
68 k	2%	4822 111 90202
75 k	2%	4822 111 90574
82 k	2%	4822 111 90575
91 k	2%	5322 111 90277
100 k	2%	4822 111 90214
110 k	2%	5322 111 90269
120 k	2%	4822 111 90568
130 k	2%	4822 111 90511
150 k	2%	5322 111 90099
160 k	2%	5322 111 90264
180 k	2%	4822 111 90565
200 k	2%	4822 111 90351
220 k	2%	4822 111 90197
240 k	2%	4822 111 90215
270 k	2%	4822 111 90302
300 k	2%	5322 111 90266
330 k	2%	4822 111 90513
360 k	2%	4822 111 90515
390 k	2%	4822 111 90182
430 k	2%	4822 111 90168
470 k	2%	4822 111 90161
510 k	2%	4822 111 90364
560 k	2%	4822 111 90169
620 k	2%	4822 111 90213
680 k	2%	4822 111 90368
750 k	2%	4822 111 90369
820 k	2%	4822 111 90205
910 k	2%	4822 111 90374
1 M	2%	4822 111 90252
1,1 M	5%	4822 111 90408
1,2 M	5%	4822 111 90409
1,3 M	5%	4822 111 90411
1,5 M	5%	4822 111 90412
1,6 M	5%	4822 111 90413
1,8 M	5%	4822 111 90414
2 M	5%	4822 111 90415
2,2 M	5%	4822 111 90185
2,4 M	5%	4822 111 90416
2,7 M	5%	4822 111 90417
3 M	5%	4822 111 90418
3,3 M	5%	4822 111 90191
3,6 M	5%	4822 111 90419
3,9 M	5%	4822 111 90421
4,3 M	5%	4822 111 90422
4,7 M	5%	4822 111 90423
5,1 M	5%	4822 111 90424
5,6 M	5%	4822 111 90425
6,2 M	5%	4822 111 90426
6,8 M	5%	4822 111 90235
7,5 M	5%	4822 111 90427
8,2 M	5%	4822 111 90237
9,1 M	5%	4822 111 90428
10M	5%	5322 111 91141

CHANGES/ADDITIONS

17. SMD MOUNTING/DEMOUNTING



27 012C12

Signal

SB
ACK
ACKN
AKN
ADC
AGC(K)
AGND
AGNDB
ANGD
ALE
AMPL.L
AMPL.R
ANINH
AN-DIG

AOL
AOR
ATSB

AUDIO L&R

BCK
BRAKE
BURSTER
BUTDT-ER
B-CHAR
B-OUT
CARDIR
CARERR
CARRE
CARMVO

CARMV1

CARREF

CCD
CCD VID
CD MODE

CDMODE
CDVID
CDVID MO
CEFM

CGC-VER

CHAR-BL
CLAB
CLAMP
CLBO
CLIP MODE
CLP
CKL
CLOCK
CLOSE
CL-CID
COM
COM1

COM2

CVBS DOC
COMP-BL
CRI
CSYNC-1
CSYNC1
CSYNC.1
CVBS
CVBS 0
CVBS OUT
CVBS-OUT
CVBS-RFM
CV-DOC

ABBREVIATION

Signal	Abbreviation
SB	Available in stanbly position
ACK	Acknowldge
ACKN	
AKN	
ADC	Analogue to Digital Convertor
AGC(K)	Automatic gain control (k-factor)
AGND	Ground for the analogue ciruit
AGNDB	
ANGD	
ALE	Address Latch Enable
AMPL.L	Amplifier for the left channel
AMPL.R	Amplifier for the right channel
ANINH	Analogue output inhibited
AN-DIG	Control signal to switch between analogue digital audio
AOL	Analogue output left channel
AOR	Analogue ouput left channel
ATSB	Attenuation of the digital audio-signal in the B-chip controlled by the muP
AUDIO L&R	Audio signal left channel and right channel for the TV-set
BCK	Bit clock signal for the DAC
BRAKE	Brakepulse for the turntable-motor
BURSTER	Burst error signal
BUTDT-ER	
B-CHAR	Blue information from character generator
B-OUT	Blue information output
CARDIR	Direction control for the optical pick-up unit
CARERR	Control signal for the optical pick-up unit
CARRE	
CARMVO	Control signal pulse detector 0 (optical pick-up unit movement/direction)
CARMV1	Control signal pulse detector 1 (optical pick-up unit movement/direction)
CARREF	Start-up position indication of the optical pick-up unit
CCD	Charge couple device
CCD VID	Video charge coupled device
CD MODE	Control switch audio/video 0=audio 0=video
CDMODE	
CDVID	Compact disc video mode
CDVID MO	
CEFM	Clock signal for eight to fourteen modulation
CGC-VER	Frame sync signal from synchronization generator
CHAR-BL	Character blanking
CLAB	Clock signal from A-chip to B-chip
CLAMP	Clamp signal for loading mechanism
CLBD	Clock-signal from B-chip to DAC-IC
CLIP MODE	CDV-signal mode
CLP	
CKL	Clock-signal
CLOCK	
CLOSE	Close signal (tray mode)
CL-CID	Clipped video for manchester decoding
COM	Communication line
COM1	Communication line 1 servo muP-user muP (DATA)
COM2	Communication line 2 servo nuP-user muP (CLOCK)
CVBS DOC	Colour video blanking drop-out corrected
COMP-BL	
CRI	Counter reset inhibited signal (A-chip)
CSYNC 1	Composite synchroniztion
CSYNC1	
CSYNC.1	
CVBS	Colour video blanking synchronization
CVBS 0	
CVBS OUT	
CVBS-OUT	
CVBS-RFMO	CVBS radio frequency modulator
CV-DOC	Composite video drop-out corrected

Signal	Abbreviation
CD-TBM	Composite video time base measured
C.V.-TBM	
C.S.	Composite sync
D1	Diode 1 connection
D2	Diode 2 connection
D3	Diode 3 connection
D4	Diode 4 connection
DAAB	Data from A-chip to B-chip
DABD	Data from B-chip to DAC-IC
DAC	Digital to analogue convertor
DATA	Shift register data
DATA EN	Date enable
DATA IN	Data input
DATA OUT	Data output
DEEM	De-emphasis
DEEMPN	
DET	Detector of the low frequency sum signal
DGND	Ground for the digital ciruit
DIFF	Tray stop/ tilt enable
DIGA L	Digital audio signal left channel
DIGAL	
DIGA R	Digital audio signal right channel
DIGAR	
DIR SEL	Selection of the rotation of the turntable-motor
DO	Drop-out signal
D.O.	
DOBM	Digital output signal from B-chip to output plug
DOUT1	Digital output 1
DOUT2	Digital output 2
DREFL	Disc reflection (from tilt detector)
DSC-M	Error generator IC (motor control)
E1	Diode voltage of D1
E2	Diode voltage of D2
E3	Diode voltage of D3
E4	Diode voltage of D4
EA	Enable
EFAB	Error flag from A-chip to B-chip
EFM	Disc signal CD audio/CD video (eight to fourteen modulation)
EN	Port enable system signal
ENRE	Not connected
F76	Oscillator frequency 7.5 MHz
FB	Feed back
FE	Focus error signal
FIL	Filament
FIL 1	Filament conn. 1
FIL 1	
FIL 2	Filament conn. 2
FIL 2	
FLEN	Frequency lock enable
FLOCKN	Frequency lock signal for external switch
FOC	Focus actuator
FOC NORM	Focus nomalizing signal/system
FOC PULSE	Focus Actuator move pulse
FOCPLS	Focus actuator move pulse
FOC RDY	Focus system is ready (focus has been found)
FOCRDY	
FOC SERV	Focus servo loop indication
FOC SRV	
FOCSRV	
FOC SPD	Focus actuator speed indication
FOCSPD	
FOC STA	Focus start-up pulse
FOCSTA	
FOC+	Focus actuator + connection
FOC–	Focus actuator – connection
G	Guard
GM	Motor ground
GND	Ground
G-CHAR	Green information from character generator

Signal	Abbreviation
G-OUT	Green information output
HALL1	Hall-element A connection 1
HALL2	Hall-element A connection 2
HALL3	Hall-element B connection 3
HALL4	Hall-element B connection 4
HALL5	Hall-element C connection 5
HALL6	Hall-element C connection 6
HALL+	+ connection for Hall-elements
HALL–	– connection for Hall-elements
HF	high frequency signal
RF	
HFATBC	High frequency signal time base corrected
HFATBC	
HF-ATBC	
HF AV	High frequency signal audio+video
HFAV	
HF-AV	
HFD	High frequency detector signal
HFI	High frequency signal input (Decoder/A-chip)
HF(ANT-IN)	High frequency signal antenna (loop-through signal)
HF (TV OUT)	High frequency signal TV output (loop-through signal)
HF-OUT	High frequency audio
HLD	Hold signal (MFE duty cycle control)
HMANCH	Line pulde for decoding the manchesta
H-MANCH	code
HPL	Headphone left channel
HP-L	
HPR	Headphone right channel
HP.R	
HSYNC	Horizontal synchronization signal
H/2	Half line frequency
I MOTOR	Motor current (turntable motor)
J MOTOR	
I2CI	Inter IC-signal
INTVID	Internal generated video graphics
INT.VID	
IREF	Refence current
LASGND	Laserdiode ground connection
LASMON	Laser monitor diode signal
LASOUT	Laser monitor output signal
LED-S	LED supply
LEV DET	Detector of the HF level signal
LF	Low frequency sum signal
LF SUM	
LFSUM	
LFD	Low frequency signal for decoding part (116% level)
LIM	Limiter circuit
LOFIC	Low pass filter IC
LPF	Low pass filter
LSB	Least significant bit
L+R	Left and right channel output signal
MC ES	
MCES	Motor control signal from A-chip to servo control
MC IN	Motor control signal output (for audio system synchronisation)
MCIN	
MCO	Motor control output (used for sync. generation wire in video II panel)
MFE	Frequency error signal for motor control
MOT	Motor
MPE	Phase error for motor control
MPLL1	Frequency lock indication signal for motor control
MR	Master reset
MTF	Modular transfer function
MUSB	Mute signal analogue audio
MUT A	
MUTA	
MUTE-A	

Signal	Abbreviation
MUTA/	Mute signal analogue audio (switch
ANDIG	Analogue/Digital audio)
MUTE-AND	
MUTA/ANDIG	
MUTEL	Mute of the left audio channel
MUTE-L	
MUTL	
MUTER	Mute of the right audio channel
MUTE-R	
MUTr	
OOF	Out of focus
OPEN	Tray open signal
OB/TC	Offset binary/two's complement
OP4	Optical pick-up unit
OUT EN	Output enable signal
PD/OC	Phase detector output current
PHASEA	Coil A of turntable motor
PHASE B	Coil B of turntable motor
PHASEB	
PHASE C	Coil C of turntable motor
PHASEC	
PLNTSC	Selection port Pall/NTSC
PLOCK	Phase lock indicator output for servo processor
POTR	Potentiometer right channel
POT-R	
POTL	Potentiometer left channel
POT-L	
QCL	Clock signal of Q channel (subcode signal)
QDA	Data of Q chanel (subcode signal)
QRA	Request/acknowledge of Q-data (A-chip-µP)
RAD	Radial actuator
RAD LAG	Radial lag control
RADLAG	
RAD PLS	Control signal to move the radial actuator
RADPLS	(high speed)
RAD SPD	Control signal to move the radial actuator
RADSPD	(slow speed)
RAD SP1	Control signal to move the radial actuator
RADSP1	(medium speed)
RADDIR	Signal to control the direction of the movement of the radial actuator
RADINT	Intergrator control (on/off) RAD OUTPUT STAGE
RAD SRV	Control mode switch (X-detection control
RADSERV	/RE-control or DAC-control)
RADSRV	
RADXON	Control mode swithc (X-detection cotrol/RE-control)
RAD+	Radial actuator + connection
RAD–	Radial actuator – connection
RAMP	Timing signal
RAMP-EN	Start of timing signal (enable)
RE	Radial error signal
RE-DIG	Digitalized radial error signal
REDIG	
RE IN	Input of the radial error signal
RE IN	
REIN	
RE OUT	Output of the radial error signal
RE1	Part 1 of the radial error signal
RE2	Part 2 of the radial error signal
REDET	Detector of the radial error signal
REF	Reference signal
REFH	Line frequency reference
REMAC	Remote acknowledge
REMIN	Remote control input
RESET	Reset pulse
RGB	Red-green blue information
R-CHAR	Red information from character generator
R-OUT	Red information output
S	Substrate
SI	Radial reference line control signal 1

Signal	Abbreviation
S2	Radial reference line control signal 2
SCAB	Subcode clock-signal from A-chip to B-chip
SCHE	Signal derived from the difference signal coming from the X-detector
SCK	Serial clock-input
SDAB	Subcode data from A-chip to B-chip
SHIFT CLK	Clock pulse for shift register
SHIFTCLK	
SM+	Spindle motor + connection (turntable motor)
SM–	Spindle motor – connection (turntable motor)
SSM	Start/stop signal for turntable motor
STANBY P	Control of the standby LED in the power control circuit
STROBE	Parallel load signal
SWITCH-S	Switch sense line
TANG-ER	Tangential error signal
TBC-ON	Time base control on
TDETD	Difference signal coming from the X-detector
TILT D	
TILTD	
TDETS	Sum signal coming from the tilt-detector
TILT S	
TILTS	
TLEDON	Tilt LED on/off control
TILTLED	LED for tiltcontrol
TLTLED	
TILT+	Tilt control signal (clockwise rotation of the tiltframe)
TILT–	Tilt control signal (counter-clockwise rotation of the tiltframe)

Signal	Abbreviation
TL	Track loss signal
TLT MOTOR	Tray/tilt motor
TLI	Time error control signal
TM+	Tray/tilt motor + connection
TM–	Tray/tilt motor – connection
VBC-DOC	Video blanking synchronisation drop-out corrected
V MDT	Motor voltage
V MOT	
VMOT	
VCO FRE	Voltage controlled oscillator frequency
VH	Hall-element voltage
VHALL	
VID AMP	Video amplifier
VMANCH	Frame pulse to decode the manchester
V-MANCH	code
VOLL	Volume control for the left channel
VOL-L	
VOL-R	Volume control for the right channel
VREF	Reference voltage
VSYNC	Vertical synchronisation
WS	Word select signal
WSAB	Word select signal from A-chip to B-chip
WSBD	Word select signal from B-chip to DAC-IC
X DETS	Sum signal coming from the X-detector
XDETS	
XDET D	Difference signal coming from the X-detector
XDETO	
XDETD	
XCLED	LED for X-direction control
X-LED	
X-DET	Detector of the X-direction movement
XSYS	System clock frequency coming from the X-tal